







Class T 825

Book D 55

1874a



















*Done*

# THE NATIONAL CENTENNIAL.

THE INTERNATIONAL EXHIBITION OF 1876.

MESSAGE

OF THE

PRESIDENT OF THE UNITED STATES  
TO CONGRESS,

TRANSMITTING

THE THIRD REPORT OF THE UNITED STATES  
CENTENNIAL COMMISSION

ON

THE PROGRESS OF THE WORK INTRUSTED TO IT UNDER ACTS OF CON-  
GRESS PROVIDING FOR A NATIONAL CELEBRATION, BY AN INTER-  
NATIONAL EXHIBITION AND COMMEMORATIVE CEREMONIES, OF  
THE ONE HUNDREDTH ANNIVERSARY OF THE INDEPEND-  
ENCE OF THE UNITED STATES, TO BE HELD AT  
PHILADELPHIA, PENNSYLVANIA, IN THE YEAR  
1876, EMBRACING REPORTS ON THE  
VIENNA EXHIBITION OF 1873.

ARRANGED AND EDITED

By HENRY D. J. PRATT.



WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1874.





# THE NATIONAL CENTENNIAL.

THE INTERNATIONAL EXHIBITION OF 1876.

MESSAGE

OF THE

PRESIDENT OF THE UNITED STATES

TO CONGRESS,

TRANSMITTING

THE THIRD REPORT OF THE UNITED STATES  
CENTENNIAL COMMISSION

ON

THE PROGRESS OF THE WORK INTRUSTED TO IT UNDER ACTS OF CON-  
GRESS PROVIDING FOR A NATIONAL CELEBRATION, BY AN INTER-  
NATIONAL EXHIBITION AND COMMEMORATIVE CEREMONIES, OF  
THE ONE HUNDREDTH ANNIVERSARY OF THE INDEPEND-  
ENCE OF THE UNITED STATES, TO BE HELD AT  
PHILADELPHIA, PENNSYLVANIA, IN THE YEAR  
1876, EMBRACING REPORTS ON THE  
VIENNA EXHIBITION OF 1873.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1874.





# THIRD REPORT OF THE U. S. CENTENNIAL COMMISSION.

## TABLE OF CONTENTS.

[For alphabetical index, see end of volume.]

	Page.
Message of the President of the United States transmitting the report of the Commission .....	1
Report of the Commission to the President .....	2
List of papers accompanying the report of the Commission .....	8
Report of the Director-General of the Commission, (Appendix A) .....	11
Circular-letters from the Director-General to United States ministers in foreign countries, (inclosures 1 and 1 <sup>c</sup> to Appendix A) .....	13
Explanation of the plan of the main pavilion, or industrial building, (inclosure 6 <sup>a</sup> to Appendix A) .....	15
Description of the art-gallery proposed, (inclosure 7 <sup>a</sup> in Appendix A) .....	16
Correspondence between the Director-General and the Executive Departments of the Government, (inclosures 8, 8 <sup>a</sup> , &c., to Appendix A) .....	17
Executive orders by the President of the United States relative to a collective exhibition by the Executive Departments, the Department of Agriculture, and the Smithsonian Institution, (inclosure 8 <sup>c</sup> in Appendix A and Appendix E) .....	21, 368
General regulations for foreign exhibitors, (inclosure 9 in Appendix A) .....	22, 323
Journal of the proceedings of the Commission at the fourth session, (Appendix B) .....	27
Courtesies extended to Hon. James G. Blaine, and remarks by him .....	29
Conference of the Commission, the directors of the Centennial Board of Finance and the Board of Supervisors of the Pennsylvania Appropriations; addresses by President Hawley, Mr. John Welsh, Hon. Wm. Bigler, Hon. Daniel M. Fox, Mr. Wm. V. McKean, and others .....	39
Courtesies extended to Hon. William D. Kelley .....	50
Election of officers of the Commission .....	55
Action of the Commission relative to the Women's Centennial Executive Committee .....	56
Adoption of by-laws .....	62
Report of the executive committee .....	68
Resolutions of various State legislatures, commending the International Exhibition, and favoring an appropriation by Congress to aid in making it a worthy celebration of the great event it is designed to commemorate .....	73
Address by the Commission to the people of the United States .....	77
Addresses to the clergy and religious associations, to teachers, to officers of the general and State governments, and to the scientific, industrial, and commercial organizations of the United States .....	78
Letter by Hon. Daniel J. Morrell, commissioner for Pennsylvania, to the Governor of that State, urging a State appropriation in aid of the Exhibition of 1876 .....	84
Organization of the Centennial Board of Finance .....	86
Report of H. D. J. Pratt .....	89
Abstract of reports of the executive commissioner .....	90
Report of the temporary secretary .....	91
Statement of expenses of the Commission, the Board of Finance, and the Citizens' Committee of Philadelphia .....	93
Report of the committee on plans and architecture .....	94, 369
Correspondence with the Commissioners of Fairmount Park relative to the grounds donated to the Commission to be used for the purposes of the Exhibition of 1876 .....	95
Report of the committee on by-laws .....	97
Report of the conference committee, appointed by the executive committee of the Commission and the directors of the Board of Finance to define the respective duties of the Commission and the Board .....	101
Index to journal .....	102
Report of Prof. William P. Blake, special agent to the Vienna Exhibition, upon its organization, administration, and results, (Appendix C) .....	109
Table of contents to the report of Mr. Blake and list of inclosures .....	8, 110
Classification of the Vienna Exhibition .....	165



	Page.
Sentiment and co-operation abroad, donations to the Exhibition, &c., (inclosure A in Appendix C) .....	269
Extent, cost, and receipts of the great international exhibitions, (inclosure B in Appendix C) .....	272
Observations on great exhibitions, by Dr. W. F. Exner, (inclosure C in Appendix C) .....	272
Report of Mr. Henry Pettit, civil engineer, special agent to the Vienna Exhibition, on the site, construction of the buildings, &c., (Appendix D).....	279
Table of contents to report of Mr. Pettit .....	9
Action of the executive branch of the National Government, proclamation by the President of the United States, (Appendix E).....	321
Address on behalf of President Grant by Hon. George M. Robeson at the dedication of grounds in Fairmount Park to the purposes of the Exhibition .....	322
Note sent by the Secretary of State to foreign ministers accredited to the United States, and to the ministers of the United States abroad .....	323
Acceptance of the invitation to take part in the Exhibition, by the German Empire, the Netherlands, Belgium, Sweden and Norway, Switzerland, Mexico, Ecuador, Hayti, and the Sandwich Islands.....	324
Financial condition and wants of the International Exhibition of 1876.....	325
Special advantages claimed for the Exhibition of 1876.....	325
The Exhibition national and international .....	326
Benefits of international exhibitions .....	327
Extract from a letter addressed by the commissioners for New York to Senators and Representatives of that State.....	331
Extracts from a paper by Prof. John L. Campbell, secretary of the Commission, on the nature and propriety of the international comparison contemplated in the acts of Congress providing for the Exhibition of 1876.....	333
List of officers and members of the Commission, with the standing committees..	335
Officers and members of the board of directors of the Centennial Board of Finance	338
Acts of Congress relating to the Exhibition .....	338
System of classification of objects of exhibition adopted by the Commission, (subject to revision).....	343
Communication from the Secretary of State, naming the board of management of the collective exhibition by the Executive Departments, the Department of Agriculture, and the Smithsonian Institution.....	369
Description and estimated cost of the buildings proposed for the Exhibition.....	373
Letter from H. D. J. Pratt to experts in various branches of industry and persons eminent in various professions, inviting criticism and amendment of the system of classification .....	377
Correspondence relative to a collective exhibition by the Executive Departments of the Government.....	378
Statistical tables relative to the great exhibitions—London, 1851; Paris, 1855; London, 1862; Paris, 1867, and Vienna, 1873...126, 127, 147, 149, 158, 213, 214, 222, 223, 224, 225, 272	

## ERRATA.

- Page 18.—For “J. C. Lyford,” read “*S. C. Lyford.*”
- Page 22.—In Rule VI, after the word “acquaint,” supply the word “*each,*” to read “the director-general will acquaint *each* commission,” &c.
- Page 29.—In eighth line from bottom, for “H. C. Johnson,” read “*F. C. Johnson.*”
- Page 38.—In list of members of Board of Finance, for “Robert M. Patterson” read “*Robert M. Patton ;*” for “John Cummings,” read “*John Cummins.*”
- Page 41.—For “Hon. Samuel Randall,” read “*Hon. Samuel J. Randall.*”
- Page 135.—For “1687,” in ninth line from top, read “1867.”
- Page 331.—In fifth line from bottom of page, for “I,” read “*We.*”

## MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

*The report of the Centennial Commissioners.*

---

FEBRUARY 25, 1874.—Read and ordered to lie on the table and be printed.

---

*To the Senate and House of Representatives :*

I have the honor, herewith, to submit the report of the Centennial Commissioners, and to add a word in the way of recommendation.

There have now been international expositions held by three of the great powers of Europe. It seems fitting that the one-hundredth anniversary of our independence should be marked by an event that will display to the world the growth and progress of a nation devoted to freedom, and to the pursuit of fame, fortune, and honors by the lowest citizen as well as the highest. A failure in this enterprise would be deplorable. Success can be assured by arousing public opinion to the importance of the occasion. To secure this end, in my judgment, congressional legislation is necessary to make the exposition both national and international.

The benefits to be derived from a successful international exposition are manifold. It will necessarily be accompanied by expenses beyond the receipts from the exposition itself; but they will be compensated for, many fold, by the commingling of people from all sections of our own country; by bringing together the people of different nationalities; by bringing into juxtaposition, for ready examination, our own and foreign skill and progress in manufactures, agriculture, art, science, and civilization.

The selection of the site for the exposition seems to me appropriate from the fact that one hundred years before the date fixed for the exposition, the Declaration of Independence—which launched us into the galaxy of nations as an independent people—emanated from the same spot.

We have much in our varied climate, soil, mineral products, and skill, of which advantage can be taken by other nationalities to their profit. In return they will bring to our shores works of their skill, and familiarize our people with them, to the mutual advantage of all parties.

Let us have a complete success in our centennial exposition, or suppress it in its infancy, acknowledging our inability to give it the international character to which our self-esteem aspires.

U. S. GRANT.

EXECUTIVE MANSION, *February 25, 1874.*

[For list of accompanying papers see page 8.]



OFFICE OF THE UNITED STATES CENTENNIAL COMMISSION,  
*Philadelphia, February 23, 1874.*

*To the President :*

Section 13 of the act approved June 1, 1872, provides "That it shall be the duty of the United States Centennial Commission to make report, from time to time, to the President of the United States of the progress of the work" intrusted to it.

In obedience to that requirement, and referring to previous communications made by the commission to the President and to Congress, under the respective dates of the 23d of November, 1872, and the 21st of February, 1873, the undersigned, president of the United States Centennial Commission, has the honor to report on behalf of the Commission as follows :

Since the date of the report submitted to Congress in February, 1873, a fourth session of the commission has been held at Philadelphia, which commenced May 7 and ended May 13, 1873. A copy of the journal of proceedings of that session, including the report of the executive committee, is annexed, (Appendix B.)

In order to secure an efficient and prompt administration of the executive business of the commission at Philadelphia, several amendments were made to the by-laws, among which was the introduction of an article (VI) authorizing the executive committee to elect one of its own members to be the director-general. By virtue of that authority, Mr. A. T. Goshorn, a member of the commission from Ohio, was, on the 12th of May, 1873, unanimously elected to that office. He was invested with full executive control of the affairs of the commission, subject to the approval of the executive committee.

Mr. Goshorn entered upon his duties on the 14th of October last, after having visited the International Exhibition at Vienna, which he carefully examined with a view to avail himself of such light as might be derived therefrom in the direction of the affairs intrusted to him. In concert with the executive committee he has organized the office of the commission and prepared regulations for the formation of the exhibition.

Much valuable information was obtained concerning the Vienna Exhibition by the agents employed by the commission for that purpose, and with the data in relation to preceding international exhibitions collected from official reports, it has been of great assistance in developing the arrangement of plans and organization for that of 1876. The reports of those agents, Messrs. W. P. Blake and Henry Pettit, will be found in the appendixes transmitted herewith.

With the report made by the commission to Congress in February, 1873, (House Mis. Doc. No. 99, 42d Congress, 3d Sess., pages 157 to 167,) were extracts from the official accounts of receipts and expenses of the French commission of the Paris Exposition of 1867.

Those accounts, together with those of other recent exhibitions, illustrate a most important and significant principle, which experience in universal expositions has more and more fully developed and established with each succeeding one—that the benefits of such exhibitions to the country giving them, and to the cause of general progress, are such as to justify and require an appropriation on the part of the government which is responsible to other powers for the success of such an undertaking; and it is impossible to imagine how a power, within whose boundaries such a concourse of industries and people takes place, can evade the responsibility.



This national enterprise has now reached that phase at which, in an international sense, it is to be decided whether the United States, as a republican nation, will fulfill that responsibility. They have already, so far as relates to foreign governments, assumed it, and the commission, acting as the agent of the States, does not know how to retrace the steps which have been taken, without discredit and injury to the national reputation. The States have already pledged themselves to compete with other governments in promoting, through international exhibitions, the cause of human advancement in the arts and industries that are the foundation of the wealth and prosperity of all nations.

In the case of the Paris Exposition of 1867, the national government of France and the city of Paris provided about three-fifths of the capital for the purposes of the exhibition, and the balance was made up by private subscriptions.

The financial basis of the Austrian International Exhibition of 1873 was as follows:

1st. The sum of \$1,500,000 was subscribed chiefly by the Trades Union of Vienna.

2d. The imperial government unreservedly appropriated four and a half millions of dollars, and added to this a loan, without interest, of one and a half million, making six million derived from the government for the purposes of the exhibition.

From the facts thus presented, it appears that European governments exhibit their practical sympathy in the cause of labor and science by a recognition of their just claims upon the public treasury for a sufficient amount of pecuniary aid to insure the success of these temporary exhibitions.

It is respectfully submitted that the Government of the United States, if true to its principles and its traditional devotion to the interests and elevation of labor and the promotion of universal progress, will certainly not refuse to follow these precedents established by European governments.

Past international exhibitions have been to some extent experimental; but the common judgment of civilized nations proclaims their success in advancing every branch of industry, science, and national development, in diffusing throughout the world the most advanced ideas, knowledge of the latest improvements in manufactures and mechanical inventions, in methods and processes, as well as in products; and also in promoting social and commercial intercourse between the people of the various countries.

European governments, perceiving the benefits specially accruing to the nations in which such exhibitions are held, have emulated each other in their efforts to secure the privilege of holding them.

The reports received through several channels concerning the action of foreign governments in regard to the President's recommendation to them of the exhibition, are such as to encourage the belief that if the President had been authorized to give a more direct and explicit invitation the acceptances would have been more general and prompt.

The Secretary of State has informed the commission that the governments of the following countries have officially communicated their decision to participate in the exhibition, viz: the German Empire, the Netherlands, Belgium, Mexico, Ecuador, and Hayti. The Secretary of State has made known the gratifying fact that Prince Bismarck, the chancellor of the German empire, in communicating printed copies of the communications from this Government on the subject to the German parliament, recommended a participation in the exhibition, and provision for



the appointment of a commissioner for each state of the empire, as well as a plenipotentiary to reside at Philadelphia until the close of the exhibition. The Republic of Ecuador has not only accepted, but has already appointed a commissioner resident, who has presented his credentials at Philadelphia. A dispatch received from the Hon. George P. Marsh, through the Department of State, gives reason for the belief that the Kingdom of Italy will add to the attractions of the exhibition by a display of specimens of the treasures of art and manufactures for which that kingdom is so justly celebrated.

From dispatches received from the minister of the United States at Vienna the confident belief is entertained that the Austro-Hungarian Empire will be conspicuously represented in our exhibition by the extent, variety, and excellence of her products.

It should be remembered that the proposed exhibition is, by the act of Congress authorizing it, invested with the character of a national celebration of the centenary of American Independence, and by the same authority has been so proclaimed and so commended to foreign nations by the President of the United States, and that the maximum amount of capital to be raised was fixed at ten millions of dollars.

It should be considered, too, that the cost of labor and of material is greater in the United States than in Europe. It is submitted, therefore, that the amount to be appropriated by Congress should be proportioned with reference to these facts, and with reference, also, to the degree of aid which experience has shown to be requisite from the governments under whose auspices the latest and most extensive of such exhibitions have been held.

It is the desire of the commission that whatever appropriation is made should be guarded by such wise provisions, and administered under such governmental control, as will insure its judicious expenditure for the purposes intended.

The recent almost unprecedented depression in manufactures, trade, and finance has interfered with the progress of subscriptions to the stock of the Centennial Board of Finance, and with the payment of installments due on those already made. This state of affairs affords another imperative reason for such action by Congress as will provide sufficient and timely appropriations to guarantee the success of the national undertaking.

Pennsylvania stands pledged by an act of her legislature for \$1,000,000, and the city of Philadelphia for a half million, to be expended upon a building to be used by the commission as a gallery of fine art, which building will be a very imposing and beautiful addition to the group, and will remain as a perpetual memorial of the occasion. These appropriations are not available for the other buildings of the exhibition. A copy of the plans of this building is annexed hereto, (Appendix A, inclosure 1.) The people of the State of Pennsylvania, in addition to the State and municipal appropriations, have subscribed to the stock of the Centennial Board of Finance about one and a half million of dollars, which will go into the general fund for the expenses of the work of the commission as it progresses. This provision for about three times the quota apportioned to the State may be regarded as fully counterbalancing any peculiar advantage to the State growing out of the location of the exhibition, and is as much as could be justly claimed from her, in view of the national character of the celebration of which the exhibition is the chief demonstrative element.

Notwithstanding that opportunities have been given in all the States and Territories by general advertisement, the agency of national banks,



and in other ways, the amount of actual subscriptions to date from such other States and Territories indicates that from this source the means could not be secured in time for use in prosecuting the work, if at all.

The commission has information that preparations are in progress throughout the country to make the most creditable exhibits of the products and industries of the nation, and that this feature of the exhibition is assured beyond any doubt; but as the enterprise is regarded as a national one, there is an unwillingness to contribute money for the preparation and installation of the exhibition, which it is regarded as specially incumbent on the National Government to provide for. While many of the States of the Union are not in a financial condition to contribute money for this purpose, the citizens thereof express the warmest sympathy in the success of the enterprise, and will give it their cordial support so far as it is in their power.

Steps have been taken to secure a proper representation of the products of every State and Territory.

Among the various interests seeking a representation in the exhibition those relating to mines and mining will be greatly benefited, and this will promote largely the prosperity and development of the States and Territories in which the mines represented may be located. A large quantity of valuable specimens has even now been collected in some of the Western Territories, and they are ready for shipment. Such arrangements will be made as will result in displaying to the world a perfect representation of the wonderful resources of the country in the precious metals, and in coal, iron, steel, copper, lead, and other minerals. Associations and individuals representing these various interests have offered their co-operation, and are perfecting plans for securing an exhibition of all the industries pertaining to them.

The agricultural resources and industries, and the implements which are used in those industries, will form a prominent and attractive feature of the occasion; and the exhibition of horses, cattle, and other domestic animals will be most extensive and thorough.

The Department of Agriculture, State boards of agriculture, and nearly all of the societies and associations representing agriculture and horticulture in all their branches, have signified their deep interest in the subject, and offered their aid and co-operation.

The Executive Departments of the General Government, also, have manifested a similar interest and disposition, and the Executive order providing for their representation in the exhibition meets with general approval.

The exhibition of fishery products and of the apparatus for capturing and preserving fish will be an interesting, instructive, and valuable feature of the display. It will embrace a general collection, representing the fisheries of the world and all the apparatus and science of fish-culture. Gentlemen learned in this study are deeply interested in preparing for the exposition.

The National Academy of Fine Arts of New York, and other art associations, have offered their co-operation with the commission in any organized effort to make the fine-art department of the exhibition worthy of the occasion in its representation of American and foreign art in all branches.

Information from Europe shows that a deep interest is taken in the exhibition by our own artists who are sojourning at the great art centers, and that they are preparing for an honorable competition.

Associations or societies of all kinds throughout the country have



manifested their sympathy with the commission, and their desire to be instrumental in promoting its work on behalf of the nation.

The scope of the exhibition is broad and comprehensive. All the products of industry, art, science, and modern civilization are covered by its classification.

In the formation of the system of classification and arrangement of the various objects, the governing idea has been to place them in the order of development from the natural state, placing first—

1. The natural products of the soil or mine, useful to man or the basis of manufactures.

2. The manufactures, and the results of the combinations of these products.

3. The means and appliances by which such results have been accomplished.

4. The effects of such productive activity.

This is a general expression of the classification. There are ten comprehensive divisions, called departments, and each department is divided into ten groups, and, when desirable, each group may include ten classes.

The ten departments of the classification which will determine the section in which articles will be located in the exhibition, (except in such collective exhibitions as may receive special sanction,) and also the arrangement of names in the catalogue, are as follows :

I. Raw materials—mineral, vegetable, and animal.

II. Materials and manufactures used for food, or in the arts, the result of extractive and combining processes.

III. Textile and felted fabrics—apparel, costumes, and ornaments for the person.

IV. Furniture and manufactures of general use in construction and in dwellings.

V. Tools, implements, machines, and processes.

VI. Motors and transportation.

VII. Apparatus and methods for the increasing and diffusion of knowledge.

VIII. Engineering, public works, architecture, &c.

IX. Plastic and graphic arts.

X. Objects illustrating efforts for the improvement of the physical, intellectual, and moral condition of man.

The proposed exhibition is projected upon a plan securing the strictest economy compatible with its character as a national celebration and with its international proportions.

The benefits to be derived by the American people from the exhibition are by no means confined to the exhibition of American productions. The arts of design, as practiced in all parts of the world, will be represented in a manner never before possible on this continent. The products of the mechanic arts and manufactures of Europe and the eastern nations will be represented on a grand and comprehensive scale, and, what is of greater importance, descriptions or illustrations of the methods and processes of their production will be given. Thus will be afforded to the millions of mechanics and artisans, and to the pupils of technical and industrial colleges and schools who may be unable to visit foreign countries, an opportunity to examine and study all that is most valuable and instructive in foreign arts and industries. Europe will come to them with its machinery and wares so arranged and classified that they can view them as a whole or study them in detail and utilize their teachings.



The Women's Centennial Executive Committee, a voluntary association, under the presidency of Mrs. E. D. Gillespie, of Philadelphia, a grand-daughter of Benjamin Franklin, has done, and is doing, a good work in promoting the success of subscriptions and the general interest in the celebration, and is now represented in twenty-four States and Territories. In the State of Pennsylvania alone they have raised upward of \$50,000 in subscriptions to the stock of the Centennial Board of Finance, and some thousands of dollars from the profits on brilliant public festivals, which have been of such a nature as to recall the incidents and sentiments which had so large a share in shaping the destinies of the republic.

The following States have passed resolutions calling upon their Senators and Representatives in Congress to lend their support to measures promotive of the success of the exhibition: North Carolina, Virginia, Kentucky, Tennessee, New Jersey, New Hampshire; and the subject is under consideration in other States and Territories.

On the 4th of July, 1873, the transfer of the grounds at the Fairmount Park to the occupancy of the commission, and their dedication to the National Celebration and International Exhibition, were effected in accordance with the requirements of the act of Congress.

The details of information upon the subject of buildings for the principal departments of the exhibition will be found in the report of the director-general, (Appendix A.)

It is a gratifying fact that the enterprise has been quite fully explained in the leading journals of most of the capitals of Europe.

During the last two years the commissioners nominated by the governors and appointed by the President have been faithfully endeavoring to carry out the act of Congress of March 3, 1871, providing for celebrating the centennial anniversary of American Independence by holding an "international exhibition" in 1876, an "exhibition of American and foreign arts, products, and manufactures," under the auspices of the Government of the United States. The legislation of Congress has been the chart of the commission as to the scale of preparations to be made. A national and international exhibition on that scale demands enormous buildings and involves heavy expenditure. A second act of Congress, already referred to, provided a plan for raising that money. The commission regrets to say that, outside of Pennsylvania, that plan has not proved successful. Preparations had been made for renewing a thorough and general appeal throughout the country, when the financial storm of last autumn put an instant check upon our operations. The time has now arrived when it is imperatively necessary to proceed with the erection of the buildings; but it is an indispensable prerequisite to know whether the money which Congress thought would be raised by the act of June 1, 1872, will be furnished in part by Congress. There is time enough for the work, but not a month to spare. The commission, therefore, respectfully and earnestly urges submitting this report to Congress as speedily as practicable, with such recommendations as, to the President, the exigency of the case may seem to require.

Respectfully submitted.

JOSEPH R. HAWLEY,

*President United States Centennial Commission.*

JOHN L. CAMPBELL,

*Secretary.*

LIST OF PAPERS ACCOMPANYING REPORT OF UNITED STATES CENTENNIAL COMMISSION TO THE PRESIDENT, FEBRUARY 23, 1874.

APPENDIX A.—Report of director-general.

Inclosure 1 to Appendix A.—Circular letter from Mr. Goshorn to United States ministers in Europe and Asia.

Inclosure 1<sup>a</sup> to Appendix A.—Same to United States ministers in Mexico, South and Central America.

Inclosure 2 to Appendix A.—Ground plan of main building.

Inclosure 3 to Appendix A.—Perspective view of front of main building.

Inclosure 4 to Appendix A.—Garden front of main building.

Inclosure 5 to Appendix A.—Transverse sectional view of same showing interior of arches.

Inclosure 6 to Appendix A.—Reduced copy of preliminary ground-plan of buildings.

Inclosure 6<sup>a</sup> to Appendix A.—Explanatory notes on the plan of the main pavilion, or industrial building.

Inclosure 7 to Appendix A.—Perspective view of the memorial hall.

Inclosure 7<sup>a</sup> to Appendix A.—Explanatory notes on plan of memorial hall, or fine-art gallery.

Inclosure 8 to Appendix A.—Mr. Goshorn to Mr. Fish, proposing a collective exhibition by the Executive Departments.

Inclosure 8<sup>a</sup> to Appendix A.—Chief of Ordnance of War Department, to committee on classification.

Inclosure 8<sup>b</sup> to Appendix A.—Surgeon-General to committee on classification.

Inclosure 8<sup>c</sup> to Appendix A.—Quartermaster-General Meigs to Director-General Goshorn.

Inclosure 8<sup>d</sup> to Appendix A.—Light-House Board to same.

Inclosure 8<sup>e</sup> to Appendix A.—Secretary of State to Director-General, transmitting Executive order of the President for a collective exhibition by Executive Departments.

Inclosure 9 to Appendix A.—General regulations for foreign exhibitors.

APPENDIX B.—Journal of proceedings of the United States Centennial Commission.

Inclosure 1 to Appendix B.—Report of the executive committee to the United States Centennial Commission.

Inclosure 2 to Appendix B.—Report of Mr. Lewis Waln Smith, as secretary to the commission.

Inclosure 3 to Appendix B.—Report of the committee on plans and architecture.

Inclosure 4 to Appendix B.—Report of committee on by-laws.

Inclosure 5 to Appendix B.—Report of committee on conference.

Inclosure 6 to Appendix B.—Alphabetical index of journal.

APPENDIX C.—Report of W. P. Blake, a member of the commission and special agent to Vienna, upon the organization, administration and results of the international exhibition, divided into parts, follows :

- I. Organization.
- II. Finances.
- III. Location.
- IV. The extent of the grounds.
- V. The buildings.



- VI. Access and transportation.
- VII. Classification and arrangement.
- VIII. Installation.
- IX. General regulations and arrangements for the comfort of visitors.
- X. Policing.
- XI. Fire department, water-service, and sanitary fittings.
- XII. Printing and publishing.
- XIII. Hotels and accommodations.
- XIV. Ticket regulations and prices.
- XV. Number of visitors.
- XVI. Jury and awards.
- XVII. International congress. Concluding observations.

#### INCLOSURES TO MR. BLAKE'S REPORT.

*Translations, statistics, illustrations, etc.*

- Sentiment and co-operation abroad. Donations. Synopsis of the preliminary report presented in December, 1873.
- Tabular statement of the extent, cost, and receipts of the principal exhibitions since the year 1851.
- Substituting temporary exhibitions by permanent exhibitions, called general or commercial museums. Translation from the report of the imperial French commission of 1867.
- Observations on great exhibitions. Translations and selections from a work by Dr. Exner.
- Remarks on classification. Translation of an article by Dr. Lespeyres Wolowski on exhibitions. Translation of articles.
- The pavilion of international commerce.
- Public cabs and carriage regulations.
- Documents and translations.

APPENDIX D.—Reports of Mr. Henry Pettit, civil engineer, special agent of the commission to the Vienna Exposition, upon plans and architecture and engineering work connected with international exhibitions, divided into parts as follows:

- I. Site of the Vienna Universal Exhibition.
- II. Preparation of the ground, foundations and drainage.
- III. General description, plan, surrounding grounds.
- IV. Style of the buildings, materials used, and decoration.
- V. Method of construction and time of erection.
- VI. Water-supply and fire department.
- VII. Ventilation and sanitary arrangements.
- VIII. Railway and city communication.
- IX. Final report on Vienna Exhibition.
- X. London, 1851.
- XI. Paris, 1855.
- XII. Paris, 1867.
- XIII. Vienna, 1873.
- XIV. Sewerage and drainage.
- XV. Water-supply, (additional.)
- XVI. Railway communication, (additional.)
- XVII. Cost of Vienna Exhibition.
- XVIII. List of buildings within the inclosure.
- XIX. List of papers, drawings, illustrations, &c., concerning the Vienna Exhibition of 1873.



XX. A few practical considerations concerning the United States Centennial buildings under the following heads.

XXI. The preparation of ample accommodation for all exhibits that may be accepted.

XXII. Adaptability to the site in Fairmount Park.

XXIII. The application of the dual system of classification and plans of exhibition.

XXIV. Further considerations with reference to the materials and superstructure of the buildings.

APPENDIX E.—Acts of Congress, proclamation, and governmental papers.

“Financial condition and wants of the International Exhibition of 1876.”

“Special advantages claimed for it.”

“The Exhibition, National and International.”

“Time a vital element.”

International Exhibitions: Some of their advantages and benefits.

List of members of the commission.

List of directors of the Centennial Board of Finance.

## APPENDIX A.

---

### REPORT OF THE DIRECTOR-GENERAL.

PHILADELPHIA, *February* 12, 1874.

SIR: On entering upon the duties assigned to me, as director-general, I found that the relations of the commission with those which might be appointed by foreign governments required my first care; and early in November last I represented to the honorable the Secretary of State the necessity of urging upon the attention of foreign governments the importance of obtaining early information of the decisions of such governments as to their participation in the exhibition of 1876, and of the timely appointment of commissions by those which decided to participate. I had first, however, addressed a circular letter to the ministers of the United States in Europe, and another to those in South and Central America and Mexico. Copies are inclosed, (inclosure 1.) This step was taken in consequence of the absolute necessity of learning, at the earliest possible moment, the decision of foreign nations, and the amount of space each would be likely to require, so that ample and proper provision should be made for each nation accordingly. Without this information it is very difficult to establish the size and character of the buildings, and to avoid the defects which have marred many features of the finest international exhibitions. The regulations for foreign exhibitors are also annexed, (inclosure 9.)

It was found necessary, with as little delay as possible, to inaugurate a uniform system of conducting the preparation of the exhibition for the several States and Territories, under such conditions as would call forth a just and ample representation of the arts, industries, and resources of each. Suggestions to secure this end have been made to the governors of the several States and Territories.

I have the honor to submit, for the information of the President and Congress, the preliminary sketches of the ground-plans, elevations, and perspective views of the principal industrial building of the exhibition, selected by the committee on plans and architecture, and approved on behalf of the commission by the executive committee. Explanatory notes accompany the plans. (Inclosures 2, 3, 4, 5, and 6.) The authors of this plan are Messrs. Calvert Vaux, architect, and George Kent Radford, engineer, of the city of New York.

The memorial hall, or permanent centennial exposition building, which is to be used as the repository of specimens of the fine arts and other precious articles, is to be erected at the expense of the State of Pennsylvania and the city of Philadelphia.

The plans, copies of which are annexed, (inclosure 7,) were designed by Messrs. Collins and Autenrieth, architects, of Philadelphia. The building will be of the most substantial character, and will remain the property of the people of Pennsylvania, as a memorial structure, to be used for the preservation and exhibition of national and State relics, and works of art, industry, mechanism, and products of the soil and mines, &c., without discrimination as to the several States of the United States and foreign governments.



In addition to these there will be other buildings required, such as the machinery-hall, agricultural and horticultural buildings, and numerous other subsidiary and necessary structures. These buildings, as at present contemplated, will cover an area of more than fifty acres.

Believing that it would be a most interesting and appropriate feature of the exhibition, in view of its memorial character, I proposed to the President, through the Secretary of State, a collective exhibition on the part of the Executive Departments of the General Government of such a comprehensive character that visitors at the exhibition would be able to form correct ideas of their functions, and examine and compare with other specimens such objects and articles as are manufactured or produced under Government supervision for Government use.

The President, on the 23d of January, 1874, issued an Executive order, providing for carrying into effect these suggestions for a collective exhibition for the Executive Departments, including also the Department of Agriculture and the Smithsonian Institution. A copy of the papers relating to this subject, including the Executive order, is annexed, (inclosure 8.)

The information received at the office of the commission, both from the United States and foreign countries, indicates a growing solicitude on the part of manufacturers and producers to contribute to the exhibition; and in this respect its success is already assured beyond any doubt.

To secure the complete and satisfactory success of the exhibition in every department, it is absolutely necessary that such appropriations be promptly made by the National Government as will enable this commission to work with those advantages of Government support that have been enjoyed by the managers of recent international exhibitions in Europe.

Is it not the more incumbent on the Government of the United States to extend such aid in this case because the exhibition is, according to the law authorizing it, a national celebration of the origin of the nation? But even without such an incentive, the Government of this republic would be untrue to the very principles on which it is founded were it now to recede from its announced intention of adding another to the series of those great international concourses which are held in the interests of industry and peace, and which do more for the elevation of labor and the recognition of its true dignity than any other institution of the age.

Some of the leading industrial nations of Europe, in response to the official communications addressed to them by the Executive Government of the United States, in obedience to the special requirement of the act of Congress, have, as you are aware, given notice of their decision to take part in the international exhibition.

I have the honor to be, sir, your obedient servant,

A. T. GOSHORN,  
*Director-General.*

Hon. J. R. HAWLEY,  
*President of the United States Centennial Commission.*



[Inclosure 1 in Appendix A.]

*Mr. Goshorn to United States ministers in Europe and Asia.*

1776. INTERNATIONAL EXHIBITION, PHILADELPHIA. 1876.

OFFICE OF THE UNITED STATES CENTENNIAL COMMISSION,  
 FOREIGN DEPARTMENT,  
 No. 904 Walnut Street, Philadelphia, October 20, 1873, to November 1, 1873.

DEAR SIR: There are various reasons which I will endeavor to explain that will, I am sure, constitute ample excuse to you for this letter, inasmuch as they affect the welfare and prestige of the country as involved in the success of the International Exhibition to be held at Philadelphia.

Having entered upon my duties as director-general of the exhibition, I devote my first attention to the relations of the commission with those of foreign powers, as a matter imperatively demanding early action.

The act of Congress providing for the exhibition was approved on the 3d of March, 1871, but owing to conditions prescribed therein as necessary precedents to the issuing of the President's proclamation, that instrument was delayed until July last, so that much valuable time was lost in carrying out the provisions of the act for communicating to foreign nations the official announcement of the exhibition, and the invitation extended to them to participate in it.

Our exhibition will differ from any that has preceded it, in that it is identified with our national celebration of the centennial anniversary of the birth of the republic. This fact, prominently set forth in the laws authorizing its organization, secured for it full national adoption by proclamation, and the warmly expressed sympathies of the President of the United States, and will, I doubt not, entitle it to the cordial co-operation of every representative of the Government abroad.

It is notorious that the principal international exhibitions which have been heretofore held have suffered great detriment from postponements and delays of various steps necessary for their development. It is the determination of this commission to avoid such delays so far as energy and punctuality on their part can prevent them. So far as American enterprise and diligence can do away with any ill effects of those which occurred in the announcement of the exhibition to foreign powers, we desire your kind and zealous co-operation in urging upon the proper branch of government the importance attached by the commission to an early official announcement of the appointment of their national commission. It is also greatly to be desired that as soon as possible an estimate may be furnished us of the amount of space which will probably be required for the exhibits from the various parts of the dominions, in the industrial building, the art building, and in the park. Reasons connected with the erection of the buildings, the allotments of space, the preparation of catalogues, arrangements for the apportionment of juries and reporting—commissions render it important that these preliminary stages of organization should be pressed forward.

The Secretary of State informed this commission that he forwarded to all of our diplomatic agents, in July last, copies of the President's proclamation and the general regulations, and at a later date copies of the report made by this commission to Congress, (House Mis. Doc. 99, 42d Cong., 3d Sess.,) containing, in a classified form, all necessary information as to the scope and purposes of the exhibition. The same papers were also furnished to the representatives of foreign governments at Washington. By reference to that report you will be able to respond to inquiries which may be addressed to you concerning the exhibition.

I shall be happy to furnish you, from time to time, with any facts in regard to the exhibition, and would esteem it a favor if you would impart to me any information or suggestions which may be likely to promote and facilitate the great work we have in hand.

I have the honor to be, sir, your very obedient servant,

A. T. GOSHORN,  
 Director-General.

[Inclosure 1c in Appendix A.]

*Form of letter to United States minister in South and Central America, Mexico, and the Antilles. (Read with changes to adapt it to the destination.)*

NOVEMBER 1, 1873.

DEAR SIR: Having been called by the United States Centennial Commission to assume the general direction of the International Exhibition of 1876, I have entered upon my duties at this office, and devote my first attention to the relations between this com-



mission and those appointed, or to be appointed, by foreign powers, as a matter imperatively demanding early action.

The act of Congress providing for the exhibition was approved on the 3d of March, 1871, but owing to the provisions of the act as to conditions precedent to the issuing of a proclamation by the President of the United States, such proclamation was not made until July last, so that much valuable time was lost in carrying out the terms of the act providing for communicating to foreign nations the official announcement of the exhibition and the invitations extended to them to participate in it.

Our exhibition, as you know, differs from any that has preceded it, in that it is identified with our national celebration of the centennial anniversary of the birth of the republic. This fact, prominently set forth in the laws authorizing its organization, secured for it full national adoption by proclamation, and the warmly expressed sympathies of the President of the United States, and will, I doubt not, claim for it the cordial co-operation of every representative of the Government abroad.

It is notorious that the principal international exhibitions have suffered great detriment from postponements and delays of various steps necessary for their development. It is the determination of this commission to avoid such delays, so far as energy and punctuality on their part can prevent them. By the practice of the same rule they feel assured that with the aid of our diplomatic representatives American enterprise and diligence will counteract any ill effects of the delays which occurred in the announcement of the exhibition to foreign governments.

The United States Centennial Commission, officially representing in this matter the nation, are mindful of the identity of interests and the warm sympathies which exist between the people of the United States and the other nations of the American continent and the Antilles, and ardently desire that our coming exhibition may be the means of enlarging mutual relations of friendship and social intercourse as well as all forms of communication between them which will tend to expand the domain of civilization and promote the prosperity and welfare of every country in this hemisphere.

They therefore request that you will, in the most cordial and fraternal spirit, commend to the government of the country in which you officially reside the importance of the immediate establishment of a competent commission. They would also recommend, for the reasons elsewhere advanced in this letter, that official notice of such appointments should also be communicated to the Government of the United States, and that, in order to gain precious time, the commission so appointed should at once enter into direct correspondence with this office, furnishing an approximate estimate of the amount of space which will probably be required for the exhibits from their country in the industrial building, in the fine-art building, and in the park. Reasons connected with the erection of the buildings, the allotments of space, the preparation of catalogues, arrangements for juries, and other details render it important that these preliminary stages of organization of foreign commissions should be pressed forward.

It is a cherished purpose, in making our arrangements for the exhibition, to bring prominently forward the resources of the American continent, and the insular nations in the adjacent seas, by devoting to them one grand section in each of the principal edifices of the exhibition. In these the specimens of skill, industry, and art, and the diversified natural productions of each American nation, while preserving a distinct national grouping, will form an integral portion in the illustration of the actual progress and condition of the arts, sciences, industries, resources, and development of our vast continent, and its present and prospective capacity for performing its part in the great drama of civilization, as well as for supplying the staple productions and fabrics and for providing homes and occupations for all who may seek them.

As this is the first opportunity that has been offered to the nations of America to exhibit their industries and resources on this continent, I trust the comprehensive idea will especially commend itself to the government to which you are accredited.

The Secretary of State informed this commission that he forwarded to all of our diplomatic agents, in July last, copies of the President's proclamation and of the general regulations, and at a later date copies of the report made by this commission to Congress, (House Mis. Doc. 99, 42d Cong., 3d sess.,) containing in a classified form all necessary information as to the scope and purposes of the exhibition. The same papers were also furnished to the representatives of foreign governments at Washington. By reference to that report you will be able to respond to inquiries which may be addressed to you concerning the exhibition.

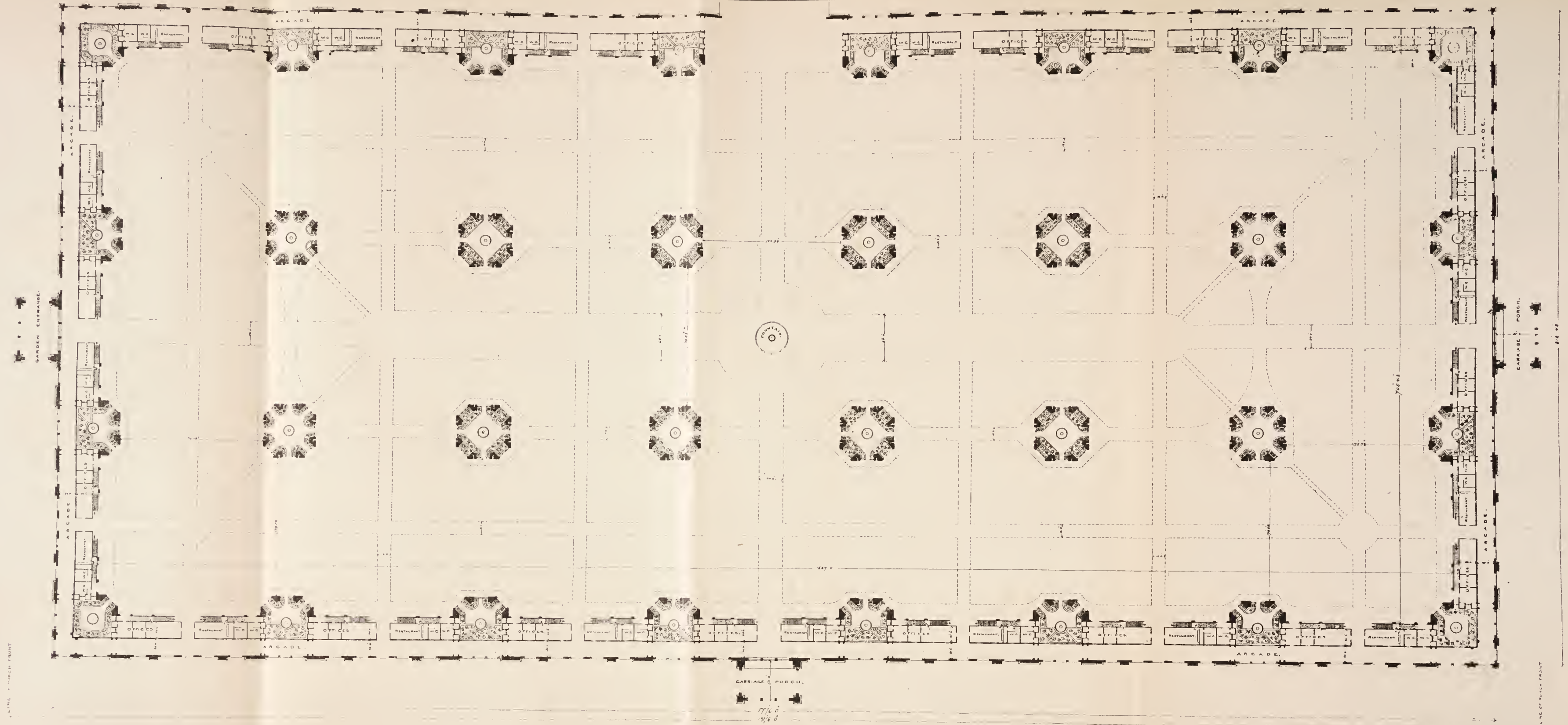
I shall be pleased to furnish you from time to time with documents and information in regard to our progress; and would esteem it a favor if you would impart to me any facts or suggestions which may be likely to promote and facilitate the great work we have in hand.

Very respectfully, and truly, yours,

ALFRED T. GOSHORN,  
*Director-General of the International Exhibition of 1876.*



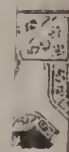
# CENTENNIAL EXHIBITION, PHILADELPHIA 1876. MAIN PAVILION.



GENERAL GROUND PLAN.

C. VAUX, ARCH'T — G. K. RADFORD, ENG'G.

TH

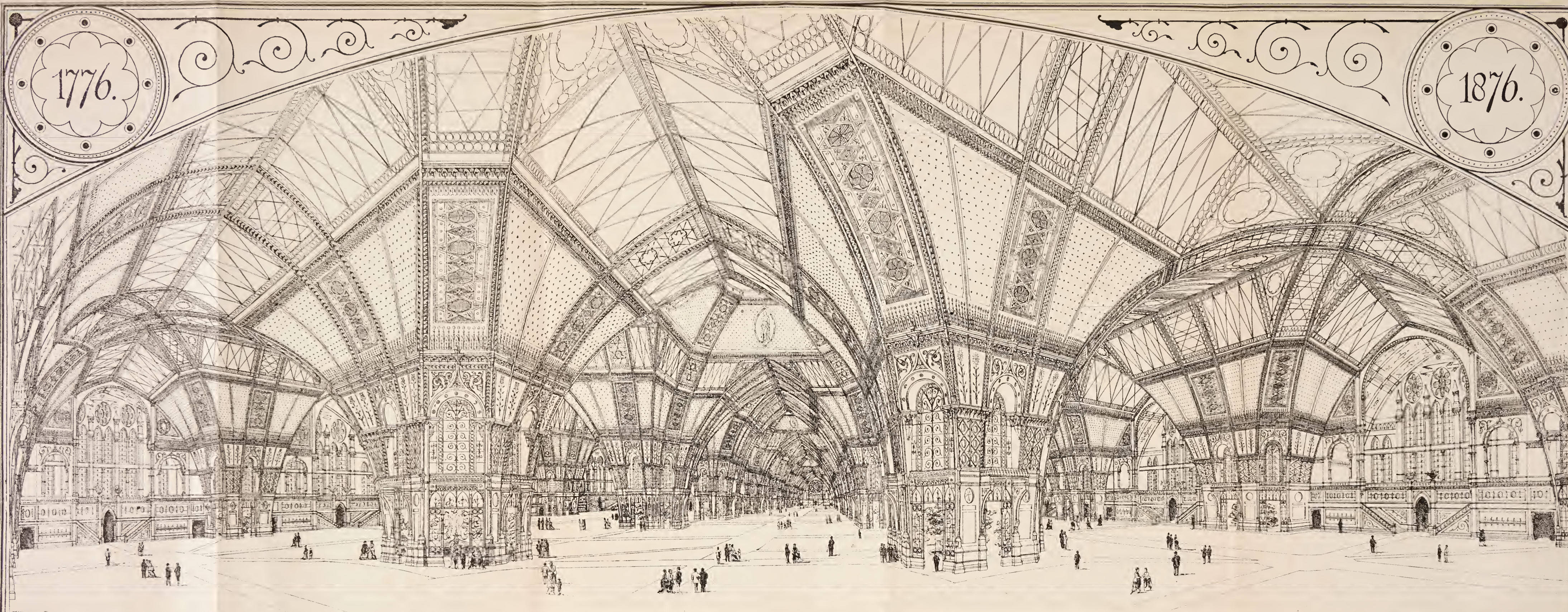


RE



1776.

1876.



T. Wilson, Dr.

— ♦ CENTENNIAL EXHIBITION ♦ PHILADELPHIA ♦ MAIN PAVILION ♦ INTERIOR VIEW ♦ — ♦ C. VAUX, ARCHITECT ♦ C. K. RADFORD, ENGINEER. ♦ — ♦





1776.

T. WISEDELL DEL.

CENTENNIAL



[Inclosure 3 in Appendix A.]

## Perspective view of main industrial building :

[Inclosure 6<sup>a</sup> in Appendix A.]*Explanatory notes of the plan of the main pavilion, or industrial building.*

The main pavilion, or temporary building, possesses certain characteristic features of its own, and at the same time embodies with them the best features of previous great exhibition buildings in London and Paris. It is confidently expected that it will prove not only well adapted to a favorable display of its contents, but a popular place of resort for both profit and pleasure. It reproduces the extensive vistas which have been found to greatly increase the popularity and success of many English exhibition buildings, and combines with them the systematic and geographical arrangement for the classification of departments and nations which was found to be eminently satisfactory at Paris in 1867.

The building is designed as a parallelogram in plan, having the following dimensions, viz :

Inside length at floor-level between the fronts of the galleries.....	1,669 feet 0 inches.
Inside breadth at same place.....	705 feet 6 inches.
Outside length at floor-level.....	1,776 feet 0 inches.
Outside breadth at floor-level.....	812 feet 6 inches.
Length over all, including carriage-porches.....	1,876 feet 0 inches.
Area of floor for exhibition purposes.....	26 acres.
(Including courts, which cover about one acre.)	
Area of galleries.....	3 acres.
Area of offices, restaurants, &c.....	1½ acres.
Total available area.....	30½ acres.

It is composed of pavilions, each one of which is a square in plan, covered with a groined-arch roof.

There are seven of these pavilions in length and three in breadth, making twenty-one in all, each pavilion being a square of 240 feet and 10 inches on the side.

The corners of the squares are cut off, so as to form octagonal open courts of 67 feet 6 inches in diameter, of which there will be twelve complete octagons in the interior of the buildings, and twenty semi-octagons on the exterior.

The pavilions are covered with curved roofs, supported on arched ribs or trusses springing from the ground-line, at the angles and faces of the octagons.

The span of the ribs, which run diagonally across the square of the pavilion, is 265 feet and 4 inches. These ribs intersect in pairs at the summit of the arch, and thus support each other against lateral forces.

The span of the ribs, which run square with the pavilion, is 173 feet and 4 inches.

Another set of ribs are placed between the square and diagonal ones, making twelve ribs in all to form a pavilion.

The five central pavilions are open on all four sides to the pavilions adjoining them.

The outer rows are open on three sides to the adjoining ones, and closed on the fourth with a gable front, which forms the exterior wall of the building.

The galleries do not interfere with the floor-space, but are arranged in the recesses formed by the projections of the gables, and communicate by stairs with the floor-level.

The space under the galleries is arranged as offices for the various national administrations, restaurants, dressing and retiring-rooms for ladies and gentlemen.

The principal entrance will be at the eastern end of that nearest the city, which will be provided with a carriage-porch.

A carriage-porch is also attached to the Elm-avenue front for street-cars, and a garden-entrance at the west end.

A temporary railroad-station will be located at the junction of Elm and Belmont avenues, and a covered approach with a bridge over Elm avenue will afford access to the building at the western end for visitors arriving by railroad.

Small balconies, or galleries of observation, will be provided in four faces of the octagonal courts, with stairs in the spaces between the ribs. The interiors of the open or garden courts will be furnished with seats, fountains, flower-beds, shrubs, &c., and so form agreeable and ready means of escape from the noise and bustle of the exhibition. These courts will also be important elements in the design, as connected with the ventilation, as well as the drainage of the building, all the water from the roofs being discharged into them, and conveyed thence by drains and sewers.



A complete system of water-supply, with ample provision of fire-cocks, &c., will be provided for protection from fire and sanitary purposes.

The articles for exhibition will be divided into departments of classification, arranged in parallel and continuous belts or zones surrounding a central aisle of 60 feet in width, and divided in pairs by aisles of 16 feet in width, with transverse aisles of 30 feet and 16 feet in width.

The space allotted to each exhibiting nation will be a segment or portion of each belt or zone, extending from the central aisle to the side of the building.

This plan is similar to that of the Paris Exhibition of 1867, but arranged in the form of a parallelogram instead of an ellipse.

Three lines of railroad-track will be laid down within the building, so that goods can be delivered directly on the required space for exhibition, so avoiding all carting or delay.

From the foregoing description it will be seen that the building, although composed of twenty-one separate pavilions, practically forms one vast hall 1,669 feet long, 705 feet broad, and 137 feet high, the courts merely acting as the columns which support an ordinary ceiling.

Vistas are thus secured in all directions, and an area of  $17\frac{1}{2}$  acres is visible from a central point.

---

[Inclosure 7a in Appendix A.]

#### MEMORIAL-HALL.—ART-GALLERY.

The memorial building will be a separate and distinct structure from the main pavilion, or industrial hall, and will be designed for a double purpose, viz, for use during 1876 as the art-gallery of the exhibition, and essentially as a national art-museum. As it will be built with funds especially contributed for that purpose by the State of Pennsylvania and city of Philadelphia, the approval of the design was vested in the State board of supervisors, a body appointed by the State legislature.

The structure is to be permanent, and long after the celebration is over will be a great attraction to strangers visiting the park.

The general outline of the plan of the building is a cross with arms respectively 420 feet and 320 feet long. The long arms are semi-circular at the ends, and the main portals are located at the extremities of the shorter arms. A dome rises from the intersection, and four towers, which appear clear and complete in outline from the ground up, flank the dome on each side. The arrangement results in a group that will produce an equally imposing appearance from any point of site or direction in which it may be seen.

The structure stands upon a terrace, and has a high base, thereby affording an opportunity for effective treatment of the immediate surroundings.

The principal dimensions are as follows:

Extreme length, exclusive of steps, (long arms,) 420 feet; extreme depth, exclusive of steps, (short arms,) 320 feet; width of each arm, 123 feet.

DOME.—Width between columns on first floor, 87 feet; outside diameter above roof, 108 feet; height of first gallery above floor, 55 feet; height of second gallery above floor, 88 feet; balcony of lower lantern above floor, 184 feet; balcony of upper lantern above floor, 230 feet; extreme inside height to top of lantern, 216 feet; top of figure above floor, 278 feet; top of figure above terrace, 284 feet.

WINGS, (ARMS).—Clear width of nave, 58 feet; average height above floor, 70 feet; clear height at ridge of lunette, 94 feet; clear width of aisles,  $22\frac{1}{2}$  feet; average height of aisles above floor, 49 feet; gallery-floor above first floor,  $23\frac{1}{2}$  feet; whole surface covered, excluding steps, 1.63 acres; cubic contents, 6,969,000 cubic feet.

The style of structure as designed was prepared by the architects for the following reasons among others: On account of the graceful lines and proportions for general and detail design; because it gives full liberty to make ample and large openings, and therefore, more light, than many others; because it admits of being finished in a very elaborate or in quite a simple manner, according to the material selected and the amount of funds appropriated; also, because it allows an effective display of sculpture and paintings. It may be called Venetian renaissance. The perspective shows the forms and character of the details. Possibly, outside vestibules will be added for the entrances at the semi-circular ends.



[Inclosure 3 in Appendix A.]

*The Director-General to the Secretary of State.*

PHILADELPHIA, November 12, 1873.

SIR: I have the honor to submit to the consideration of the President and the heads of the Executive Departments at Washington, a copy of a letter of the 19th of July last, addressed, by direction of the Chief of Ordnance of the War Department, to our committee on classification, in response to a letter inviting criticism upon the preliminary sketch of the classification of objects and subjects for the International Exhibition of 1876.

The plan proposed by the Chief of Ordnance suggests to the commission the expediency of including all of the Departments and branches of the National Government in a collective exhibition illustrating its functions and administration in time of peace as well as its resources as a war power. It is evident that in no other way can so imposing and effective a demonstration be presented to the world of the nature of our institutions and their adaptation to the wants of our people.

We would suggest that such a collective exhibition should be initiated in each of the Executive Departments by the preparation of a historical statement of the progress of the Department in organization and methods of transacting business, from its origin, to be accompanied by specimen pages of all forms of books of record or accounts, and of blanks that may have been used in such Departments, or offices under its control, and that it embrace all objects or articles produced by or under the direction of the Department.

The additional inclosures mentioned in the subjoined list will afford a hint as to the magnitude which such an exhibition might attain.

Should these suggestions meet with the approval of the President and his advisers, I would propose that a conference may be held as soon as may be convenient to the Government, between such person or persons as may be designated by the President, and representatives of this commission, with a view to determine as to the mode of arranging such a collective exhibition, whether in a separate building or in the main industrial building, and to consider such matters of detail as may require attention.

I have the honor to be, sir, your obedient servant,

A. T. GOSHORN,  
*Director-General International Exhibition, 1876.*

Hon. HAMILTON FISH,  
*Secretary of State.*

---

*List of Inclosures.*

1. Chief of Ordnance of the War Department to committee on classification, July 19, 1873.
2. Surgeon-General United States Army to committee on classification, June 25, 1873.
3. Quartermaster-General to Director-General Goshorn, September 15, 1873.
4. Light-House Board to Director-General Goshorn, October 23, 1873.

---

[Inclosure 3a in Appendix A.]

*Chief of Ordnance of War Department to committee on classification.*

ORDNANCE-OFFICE, WAR DEPARTMENT,  
*Washington, July 19, 1873.*

SIR: Acknowledging receipt of your communication of May 2, 1873, inviting critical suggestions as to the enumeration of classes in the programme of the International Exhibition of 1876, I am directed by the Chief of Ordnance, in answer thereto, to offer the following suggestions, viz: The system of classification adopted by the commission allows of no marked distinction between those products which are the results of

peaceful pursuits and those which are made during, or in anticipation of, a state of war. It is submitted that a line of demarkation should be preserved in the exhibition between our industrial energies as a nation of peaceful citizens and as a nation prepared for war. The array of products and appliances of the peaceful arts, under the admirable scheme which has been adopted by the commission, would illustrate our enlightenments, our industry, ingenuity, and material wealth as a nation, while a separate array of our war material is essential as an exponent of our national prestige and power. A state of war is properly an exceptional one for any nation; the enginery and material of war is likewise exceptional in its nature, and ought to be given a special and separate display.

It is, therefore, respectfully submitted that an additional department be added to the classification under which may be included in proper order the war material of the nation, both military and naval.

Under the War Department might be exhibited, by the sanction of the Secretary of War, the materials appertaining to the Engineer, the Ordnance, the Quartermaster's, Signal, and Medical Departments, and under the Navy Department such material as might be named by the Secretary of the Navy.

The materials of the Engineer might include in part systems of fortifications, military engineering, sapping and mining, torpedoes, &c.; that of the Ordnance, cannon, carriages, artillery-equipments, projectiles, small-arms accouterments and equipments, powder and small-arm ammunition, appliances for mechanical maneuvers, ordnance-machinery, &c.; that of the Quartermaster's, army-clothing, camp and garrison equipage, barracks, &c.; that of the Signal, systems of signal-telegraphy, storm-signals, meteorology, army telegraphic material, &c.; that of the Medical, military hospitals, medicine, surgery, hygiene, &c.

This new provision for war materials would not, it is thought, seriously disturb the classification at present adopted by the commission, as all war material included in the present arrangement could be withdrawn and assembled in one department under cognate groups and classes.

Should these suggestions meet with the approval of the commission, it is thought that with the sanction of the proper authorities arrangements could be inaugurated by which a creditable display of the military strength of the nation could be made at the Centennial Exhibition in 1876.

Very respectfully, your obedient servant,

J. C. LYFORD,

*Captain of Ordnance, Principal Assistant.*

H. D. J. PRATT, Esq.,

*[For the Chairman of Committee on Classification, Office of United States]*

*Centennial Commission, 904 Walnut Street, Philadelphia, Pa.*

---

*[Inclosure 8b.]*

*Surgeon-General to committee on classification.*

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE,

*Washington, D. C., June 25, 1873.*

SIR: I have carefully examined the pamphlet containing the system of classification adopted by the United States Centennial Commission, which accompanied your letter of April 30, 1873. It appears to me highly desirable that all the objects relating to the science of medicine (including surgery and hygiene) should be embraced in a single group and exhibited together, rather than scattered throughout many groups. I am sure that no other arrangement will be generally satisfactory to medical men throughout the world.

This group would naturally be "Group 101" in the plan of the commission, and should be entitled "Medicine," (not "Sanitary.")

I inclose an outline classification of this group, which appears to embrace the whole subject, and should this outline prove acceptable to the commission I will take pleasure in supplying details. (Please return this proposed outline grouping with your reply.)

Very respectfully, your obedient servant,

C. H. CRANE,

*Assistant Surgeon-General, for the Surgeon-General.*

H. D. J. PRATT, Esq.,

*[For Committee on Classification,] 904 Walnut Street, Philadelphia, Pa.*



## MEDICINE.

- I. Medicines.
  1. Officinal. (In any authoritative pharmacopœa.)
    - a. Articles of the *materia medica*.
    - b. Preparations.
  2. Unofficinal.
    - a. New remedies.
    - b. Patent medicines.
    - c. Miscellaneous.
- II. Dietic preparations, (as beef-extracts and other articles intended especially for the sick.)
- III. Pharmaceutical apparatus. (Including apparatus for use on the large scale as well as that intended particularly for apothecaries.)
- IV. Instruments for physical diagnosis, (such as clinical thermometers, stethoscopes, ophthalmoscopes, &c., except clinical microscopes, which should be exhibited with other microscopes in the section for optical apparatus.)
- V. Surgical instruments and appliances, (including, besides instruments, dressing, apparatus for deformities, prothetic apparatus.)
- VI. Obstetrical instruments and appliances.
- VII. Dental instruments and appliances.
- VIII. Vehicles and appliances for the transportation of the sick and wounded. (Both during peace and war, on shore and at sea.)
- IX. Hospitals and their equipments. (Including temporary and permanent military hospitals, civil hospitals for general purposes and for special purposes, such as for the treatment of the insane, for lying-in women, for the eye, for venereal, for contagious diseases, &c., dispensaries, and asylums.)
- X. Hygiene, public and private. (Including everything that relates to quarantine and the sanitary laws and regulations of communities.)
- XI. Means of medical and surgical instructions.
  1. General and special medical schools, (including plans of buildings, &c.)
  2. Medical and surgical museums.
  3. Medical libraries, books, and journals.

---

[Inclosure 8c in Appendix A.]

*Quartermaster-General to Director-General Goshorn,*

WAR DEPARTMENT, QUARTERMASTER-GENERAL'S OFFICE,  
*Washington, D. C., September 15, 1873.*

SIR: In compliance with your circular-letter, I have the honor to furnish herewith a list of clothing, camp and garrison equipage, and of other property of the Quartermaster's Department, which may be placed on exhibition at the United States International Exhibition at Philadelphia, in 1876.

I am, very respectfully, your obedient servant,

M. C. MEIGS,  
*Quartermaster-General, Brevet Major-General, U. S. A.*

Mr. ALFRED T. GOSHORN,  
*Director-General United States Centennial Commission,  
 904 Walnut Street, Philadelphia, Pa.*

1776.

UNITED STATES INTERNATIONAL EXHIBITION.

1876.

Blank form for exhibitors.

Name of article.	Space required.
A suit of uniform for— Engineers ..... Cavalry ..... Artillery ..... Infantry .....	
1 great-coat ..... 1 pair boots ..... 1 pair bootees, (shoes)..... 1 wool blanket..... 1 iron bunk..... 1 camp-kettle..... 1 mess-pan ..... 1 drum, complete ..... 1 bugle, with cord and tassel ..... 1 trumpet .....	7½ by 3 feet.
1 hospital-tent, complete .....	{ height, 11 feet. length, 14 feet. width, 14 feet.
1 wall-tent, complete .....	{ height, 8 feet. length, 9 feet. width, 9 feet.
1 common tent, complete.....	{ height, 6 feet 10 inches. width, 3 feet 4 inches. length, 6 feet 10 inches.
1 garrison-flag..... 1 storm-flag ..... 1 recruiting-flag ..... National colors ..... Regimental colors..... 1 standard for mounted regiments ..... 1 guidon ..... 1 color-belt and sling ..... 1 camp-color.....	
1 six-mule harness ..... 1 four-mule harness ..... 1 ambulance-harness..... 1 historic wagon..... 1 new army-wagon..... 1 ambulance..... 1 pack-saddle..... 1 aparejo .....	10 by 6 feet, } 10 by 4 feet, } wall space. 10 by 2 feet, } 9 by 17 feet, } 9 by 17 feet, } floor space. 8 by 13 feet, } 3 by 2 feet, } 4 by 3 feet, }

M. C. MEIGS,  
Quartermaster-General, Breret Major-General, U. S. A.  
WAR DEPARTMENT, QUARTERMASTER-GENERAL'S OFFICE,  
Washington, D. C., September 15, 1873.

[Inclosure 8d in Appendix A.]  
Light-House Board to Director-General Goshorn.

TREASURY DEPARTMENT,  
OFFICE OF THE LIGHT-HOUSE BOARD,  
Washington, D. C., October 23, 1873.

SIR: In reply to your circular I herewith send you an estimate of the probable  
amount of space which will be required by the Light-House Establishment at the  
exhibition to take place in Philadelphia in 1876.  
Very respectfully,

ALFRED T. GOSHOEN, Esq.,  
Director-General United States International Exhibition, 1876,  
904 Walnut Street, Philadelphia, Pa.

GEORGE H. ELLIOT,  
Major of Engineers, U. S. A., Engineer Secretary.



Date.	Name of article.	Space required.
1873. Oct. 23.	Light-house apparatus, models, &c., to be furnished by the Light-House Board of the United States.	900 square feet.

GEORGE H. ELLIOTT,  
*Major of Engineers, Engineer Secretary Light-House Board.*

[Inclosure &c in Appendix A.]

*Hon. Secretary of State to Mr. Goshorn.*

DEPARTMENT OF STATE,  
*Washington, January 26, 1874.*

SIR: I inclose herewith, for your information, a copy of an Executive order of the 23d instant, relating to the United States Centennial Exhibition of 1876.

I am, sir, your obedient servant,

HAMILTON FISH.

A. T. GOSHORN, Esq., &c., &c., &c.,  
*904 Walnut Street, Philadelphia, Pa.*

*By the President of the United States.*

EXECUTIVE ORDER.

Whereas it has been brought to the notice of the President of the United States that in the International Exhibition of arts, manufactures, and products of the soil and mine to be held in the city of Philadelphia in the year eighteen hundred and seventy-six, for the purpose of celebrating the one hundredth anniversary of the Independence of the United States, it is desirable that from the Executive Departments of the Government of the United States, in which there may be articles suitable for the purpose intended, there should appear such articles and materials as will, when presented in a collective exhibition, illustrate the functions and administrative faculties of the Government in time of peace, and its resources as a war power, and thereby serve to demonstrate the nature of our institutions and their adaptations to the wants of the people :

Now, for the purpose of securing a complete and harmonious arrangement of the articles and materials designed to be exhibited from the Executive Departments of the Government, it is ordered that a board, to be composed of one person to be named by the head of each of the Executive Departments which may have articles and materials to be exhibited, and also of one person to be named in behalf of the Smithsonian Institution, and one to be named in behalf of the Department of Agriculture, be charged with the preparation, arrangement, and safe-keeping of such articles and materials as the heads of the several Departments and the Commissioner of Agriculture and the Director of the Smithsonian Institution may respectively decide shall be embraced in the collection.

That one of the persons thus named, to be designated by the President, shall be chairman of such board, and that the board appoint from their own number such other officers as they may think necessary. And that the said board, when organized, be authorized under the direction of the President to confer with executive officers of the Centennial Exhibition in relation to such matters connected with the subject as may pertain to the respective departments having articles and materials on exhibition. And that the names of the persons thus selected by the heads of the several Departments, the Commissioner of Agriculture, and the Director of the Smithsonian Institution shall be submitted to the President for designation.

By order of the President.

HAMILTON FISH,  
*Secretary of State.*

WASHINGTON, *January 23, 1874.*

[Inclosure 9 in Appendix A.]

## No. 4.

## GENERAL REGULATIONS FOR FOREIGN EXHIBITORS.

1. The Congress of the United States of America have provided for the holding of an exhibition of arts, manufactures, and products of the soil and mine. A proclamation by the President, issued July 4, 1873, announced the exhibition and commended it to all nations.

2. Upon the nomination of the governors of the States and Territories of the United States the President has appointed commissioners to represent each State and Territory in the United States Centennial Commission. This commission has been charged with the duty of perfecting and carrying out the plan for holding the exhibition.

3. Its officers are: President, Joseph R. Hawley; Vice-Presidents, Alfred T. Goshorn, Orestes Cleveland, William M. Byrd, John D. Creigh, David Atwood, Thomas H. Coldwell; Director-General, Alfred T. Goshorn; Secretary, John L. Campbell; Counselor and Solicitor, John L. Shoemaker.

4. For the more efficient conduct and management of its affairs the Centennial Commission has intrusted the direction and supervision of the exhibition to Commissioner Alfred T. Goshorn, of the State of Ohio, as Director-General.

**RULE I.** The exhibition will be held at Fairmount Park, in the City of Philadelphia, and will be opened on the 19th day of April, 1876, and closed on the 19th of October following.

**RULE II.** During this period, it will be open to the public daily, except on Sundays, between the hours of 9 a. m. and 6 p. m.

**Organization of exhibits.** All governments have been invited to appoint commissions for the purpose of organizing the exhibits to be contributed by their respective citizens. The appointment of such commissions should be notified to the director-general before July 4, 1874.

**RULE III.** Applications for space and negotiations relative thereto must be conducted with the proper commission.

**RULE IV.** All communications concerning the exhibition should be thus addressed: "The Director-General of the International Exhibition of 1876, Philadelphia, Pa., United States of America."

**Allotment of space.** Full diagrams of the buildings and grounds will be furnished, on or before July 4, 1874, to the commissions, indicating the localities to be occupied by each nation, subject, however, to revision and re-adjustment.

**RULE V.** As soon thereafter as may be, but not later than November 1, 1874, the commissions are requested to notify the director-general whether they desire any increase or diminution of the space offered them.

**RULE VI.** After May 1, 1875, no applications for space will be received.

By July 4, 1875, the director-general will acquaint commission definitely with the space it is to occupy, and the commission shall at once apportion it among its several exhibitors.

**RULE VII.** Before October 1, 1875, the commissions must furnish the director-general with detailed plans of their allotted space, showing the place of each exhibitor, and also with lists of the exhibitors, and all other information necessary for the preparation of the official catalogue.



Products brought into the United States, at the port of Boston, New York, Philadelphia, Baltimore, Portland, Me., Port Huron, New Orleans, or San Francisco, intended for display at the International Exhibition, will be allowed to go forward to the exhibition buildings, under proper supervision of customs officers, without examination at such ports of original entry, and at the close of the exhibition will be allowed to go forward to the port from which they are to be exported. No duties will be levied upon such goods, unless entered for consumption in the United States.

Custom-house regulations.

The transportation, receiving, unpacking, and setting up of the products for exhibition will be at the expense of the exhibitor. Provision, however, will be made for storing the cases during the continuance of the exhibition, without charge to exhibitors and with as little inconvenience or delay as possible.

RULE VIII.  
Delivery and removal of goods.

The installation of heavy articles requiring special foundations or adjustment should, by special arrangement, begin as soon as the progress of the work upon the public buildings will permit. The general reception of articles at the exhibition-buildings will commence on January 1, 1876, and no articles will be admitted after March 31.

RULE IX.  
Reception of goods.

Space not occupied on the 1st of April, 1876, will revert to the director-general for re-assignment.

RULE X.  
Forfeiture of space.

Products may be entered either for exhibition or for competition. If for competition, the exhibitor must so state before January 1, 1876; otherwise, his products will be admitted for exhibition only, and will not be examined by the international juries for the distribution of awards.

RULE XI.  
Products for exhibition and for competition.

No article can be transferred from the class for exhibition to that for competition, or *vice versa*, after January 1, 1876.

RULE XII.  
Not transferable.

An official catalogue will be published by the Centennial Commission.

Official catalogue.

The catalogue will be printed in four distinct versions, viz, English, French, German, and Spanish. The boards and commissions must give the texts for their portions of the catalogue in each of these languages, and as nearly as possible verbally identical, before the date fixed in Rule VII, viz, October 1, 1875. But necessary modifications or corrections may be made in the text as late as February 1, 1876.

RULE XIII.

The ten departments of the classification which will determine the section in which articles will be located in the exhibition, except in such collective exhibitions as may receive special sanction, and also the arrangement of names in the catalogue, are as follows:

- I. Raw materials—mineral, vegetable, and animal.
- II. Materials and manufactures used for food, or in the arts, the result of extractive or combining processes.
- III. Textile and felted fabrics; apparel, costumes, and ornaments for the person.
- IV. Furniture and manufactures of general use in construction and in dwellings.
- V. Tools, implements, machines, and processes.
- VI. Motors and transportation.

VII. Apparatus and methods for the increase and diffusion of knowledge.

VIII. Engineering, public works, architecture, &c.

IX. Plastic and graphic arts.

X. Objects illustrating efforts for the improvement of the physical, intellectual, and moral condition of man.

The subdivisions of the departments will be communicated to the commissions at an early day, together with explicit regulations for the preparation of the catalogue.

RULE XIV. The right of publishing and selling the official catalogues is expressly reserved to the Centennial Commission.

RULE XV. Exhibitors will not be charged for space.  
Charges and exemptions.

Steam-power and water will be supplied under rules to be hereafter announced. It will be necessary, in making application for either of these, for the exhibitor to state the quantity required, and the manner in which it is to be employed.

RULE XVI. Exhibitors must provide, at their own cost, all show-cases, shelvings, counters, fittings, &c., which they may require; and all countershafts, with their pulleys, belting, &c., for the transmission of power from the main shafts in the machinery-hall. All arrangements of articles and decorations must be in conformity with the general plan, and under the inspection of the director-general.

RULE XVII. Special constructions of any kind, whether in the buildings or grounds, can only be made upon the written approval of the director-general.

Responsibility for safety of goods. The Centennial Commission will take precautions for the safe preservation of all objects in the exhibition; but it will in no way be responsible for damage or loss, or for accidents by fire or otherwise, however originating. Exhibitors or commissions may insure their own goods, for which favorable facilities will be arranged; and they may employ agents of their own choice to guard them during the hours the exhibition is open to the public. But the employment of such agents must be subject to the approval of the director-general; and they must observe such rules as may be prescribed for their government while on the exhibition premises; and they may at any time be discharged for reasons satisfactory to the director-general.

RULE XVIII. Exhibitors' agents.

RULE XIX. The commissions, or the individual exhibitors, or such agents as they may designate, shall be responsible for the receiving, unpacking, and arrangement of objects, as well as for their removal at the close of the exhibition; but no person shall be permitted to act as such agent until he can give to the director-general written evidence of his having been approved by the proper commission.

Forwarding of goods. In forwarding goods to the exhibition, commissions are desired to provide that their contributions shall arrive in as few consignments as possible.

In due time each commission will be informed what color should be adopted for the labels upon all packages sent from its own country, as a means of facilitating the proper distribution of the goods and storage of cases.

RULE XX. Each label must be addressed "To the Centennial Commission, for the International Exhibition of 1876, Philadelphia, United States of America."



It must also give the following particulars: (1) the country from which it comes; (2) name or firm of the exhibitor; (3) residence of the exhibitor; (4) group to which objects belong; (5) exhibitor's number in catalogue; (6) number of packages sent by that exhibitor; (7) number of particular packages; (8) the building or part of the grounds where goods are to be deposited.

RULE XXI.

No package shall contain objects belonging to different groups, except in the case of collective exhibitions specially sanctioned.

RULE XXII.

At least two labels must be affixed to different but not opposite sides of each case. Losses may be avoided by attaching further labels to the inside of all portions into which each case is liable to be divided.

RULE XXIII.

Within each package must be a list of all objects it contains.

RULE XXIV.

If no authorized person is at hand to receive goods when presented for delivery, they shall be removed without delay, and stored at the cost and risk of the commission to which they belong.

RULE XXV.

Cases, whether unopened or empty, cannot be allowed to incumber exhibition-spaces or passage-ways. Empty cases must be immediately removed and stored; and those which are not promptly unpacked will, at the option of the director-general, be either removed for storage or at once opened, at the risk and expense of the owners.

RULE XXVI.

The exhibitor must attach to each article a label giving the following particulars: (1) class to which object belongs; (2) the country from which it comes; (3) name of object; (4) name or firm of exhibitor; (5) residence of exhibitor; (6) name and residence of agent for sale, (if desired;); (7) name of inventor, artist, or workman, (if desired;); (8) price of object or words "not for sale," (if desired;); (9) the words "for exhibition" or "for competition."

RULE XXVII.  
Descriptive labels.

Exhibitors and their agents will not be permitted to invite visitors to make purchases. But they may answer questions addressed to them and distribute descriptive cards, price-lists, &c., when asked to do so.

RULE XXVIII.  
Conduct of exhibitors.

Special localities will be provided for the sale by exhibitors to visitors, of publications relating to the exhibition and objects exhibited. But such sales shall not take place elsewhere in the exhibition buildings.

RULE XXIX.

Articles that are highly inflammable, or explosive, or in any way dangerous or offensive, also patent medicines, nostrums, and empirical preparations whose ingredients are concealed, will not be admitted to the exhibition; and if introduced, will be immediately removed. The commission will, from time to time, make any particular regulations concerning the exhibition of such substances that may seem necessary.

RULE XXX.  
Excluded articles.

Objects sold can in no case be removed before the close of the exhibition.

RULE XXXI.  
Sales.

Sketches, drawings, photographs, or other reproductions of articles exhibited will only be allowed upon the joint assent of the exhibitor and the director-general. But gen-

RULE XXXII.  
Reproduction of articles.

eral views of portions of the building may be made upon the director-general's sanction.

RULE XXXIII.  
Removal of  
goods.

Immediately after the closing of the exhibition, exhibitors shall proceed to remove all their effects, and shall complete such removal before December 31, 1876. All goods then remaining shall be restored by the director-general at the owner's risk and expense. Any goods that may still be unredeemed on the 1st of July, 1877, shall be sold at public sale, and the proceeds applied as the commission may hereafter determine.

RULE XXXIV.  
Acknowledg-  
ment of rules.

Each person who becomes an exhibitor thereby acknowledges and undertakes to keep the rules and regulations established for the government of the exhibition.

Special regulations will be issued concerning the exhibition of fine arts, the organization of international juries, and awards of prizes, and on other points not touched upon in these preliminary instructions.

The Centennial Commission reserves the right to explain or amend these regulations, whenever it may be deemed necessary for the interests of the exhibition.

A. T. GOSHORN,  
*Director-General.*

Attest:

JOHN L. CAMPBELL,  
*Secretary.*

PHILADELPHIA, *February 19, 1874.*



## APPENDIX B.

---

### *Journal of the proceedings of the United States Centennial Commission— Fourth session.*

#### FIRST DAY'S SESSION.\*

PARLOR C, CONTINENTAL HOTEL,  
*Philadelphia, Wednesday, May 7, 1873.*

A stated meeting of the United States Centennial Commission was held this day at 12 o'clock noon, in Parlor C, Continental Hotel, Philadelphia.

At the hour named the meeting was called to order by Hon. JOSEPH R. HAWLEY, president of the commission, who said :

GENTLEMEN : It gives me great pleasure to welcome you again. This is in reality our first annual meeting, although we have been organized some fourteen months. Up to within the past three or four months we were not sure of success, but now it is an established fact that we shall have a Centennial Exposition. It remains for us to determine as to the magnitude of it, and we have considerable work before us.

The people of Pennsylvania and of Philadelphia have responded nobly to the call, and now we have enough to insure us against failure. We have something more than two and a half millions "placed," if not more. There is no necessity for my entering into detail. They will be found in the reports to be heard.

The roll was called, and the following members answered to their names, to wit :

Alabama.—William M. Byrd, commissioner.

Arizona.—Richard C. McCormick, commissioner.

John Wasson, alternate.

California.—John Dunbar Creigh, commissioner.

Colorado.—N. C. Meeker, alternate.

Connecticut.—Joseph R. Hawley, commissioner.

Dakota.—George A. Batchelder, commissioner.

District of Columbia.—James E. Dexter, commissioner.

Lawrence A. Gobright, alternate.

Florida.—John S. Adams, commissioner.

J. T. Bernard, alternate.

Georgia.—Lewis Waln Smith, alternate.

Idaho.—Thomas Donaldson, commissioner.

Illinois.—Frederick L. Matthews, commissioner.

Indiana.—John L. Campbell, commissioner.

David M. Boyd, jr., alternate.

Iowa.—Robert Lowry, commissioner.

---

\* See alphabetical index at the end of this journal.

Kentucky.—Smith M. Hobbs, alternate.  
 Louisiana.—Edward Penington, alternate.  
 Maryland.—James T. Earle, commissioner.  
 Michigan.—James Birney, commissioner.  
 Minnesota.—J. Fletcher Williams, commissioner.  
 Missouri.—John McNeil, commissioner.  
           Samuel Hays, alternate.  
 Nebraska.—Henry S. Moody, commissioner.  
 Nevada.—William Wirt McCoy, commissioner.  
           James W. Haines, alternate.  
 New Hampshire.—Ezekiel A. Straw, commissioner.  
 New Jersey.—Orestes Cleveland, commissioner.  
           John G. Stevens, alternate.  
 New York.—John V. L. Pruyn, commissioner.  
 North Carolina.—Jonathan W. Albertson, alternate.  
 Ohio.—Alfred T. Goshorn, commissioner.  
 Oregon.—Andrew J. Dufur, alternate.  
 Pennsylvania.—Daniel J. Morrell, commissioner.  
 Rhode Island.—George H. Corliss, commissioner.  
           Samuel Powel, alternate.  
 Tennessee.—William F. Prosser, alternate.  
 Texas.—William Henry Parsons, commissioner.  
 Utah.—Oscar G. Sawyer, alternate.  
 Vermont.—Middleton Goldsmith, commissioner.  
 Virginia.—Walter W. Wood, commissioner.  
 Washington Territory.—Elwood Evans, commissioner.  
 West Virginia.—Alex. R. Boteler, commissioner.  
           Andrew J. Sweeney, alternate.  
 Wisconsin.—David Atwood, commissioner.  
 Wyoming.—Robert H. Lamborn, alternate.

The reading of the minutes of the last meeting of the commission was dispensed with.

Mr. LOWRY, of Iowa, from the committee on credentials, submitted the following report:

PHILADELPHIA, May 7, 1873.

*To the United States Centennial Commission :*

Your committee on credentials report that the following gentlemen, having presented their credentials, are found to be duly constituted members of this commission :

Governor E. A. STRAW, commissioner from New Hampshire.  
 Hon. ELWOOD EVANS, commissioner from Washington Territory.  
 Hon. SMITH M. HOBBS, alternate from Kentucky.  
 Hon. EDWARD PENINGTON, alternate from Louisiana.  
 Hon. SAMUEL HAYS, alternate from Missouri.  
 Hon. JAMES W. HAINES, alternate from Nevada.  
 Hon. E. W. LITTLE, commissioner from New Mexico.

ROBERT LOWRY,  
Chairman.

Which was read and accepted.

Mr. MORRELL, of Pennsylvania, chairman of the executive committee, submitted a report of the transactions of the committee since the



last report, and presented therewith a copy of the minutes of the meeting of the stockholders of the Centennial Board of Finance, and the names of the gentlemen elected the first board of directors of that body, (Appendix No. 1;) which having been read,

Mr. PROSSER, of Tennessee, moved that the report be accepted; which was agreed to.

Mr. LEWIS WALN SMITH, of Georgia, submitted his report as temporary secretary of the commission, with a full account of the expenditures thus far incurred in paying the expenses of the commission, and the expense of organizing the Centennial Board of Finance, (Appendix No. 2;) which was read and accepted.

Hon. JAMES G. BLAINE, Speaker of the House of Representatives of the United States, was introduced to the commission and spoke as follows:

Mr. PRESIDENT AND GENTLEMEN: I must confess I am taken a little by surprise. I was about taking a seat in what we at Washington call the "lobby." An enterprise of this kind, however, is one which I am sure will require no "lobbying" at Washington. I have never doubted that the Congress of the United States, which had contributed \$400,000 to the French Exposition, *would at the proper time contribute millions to our own exposition.* I have no right to say that such a thing will be done, but I have no doubt that Congress will, in this matter, display a most liberal and comprehensive spirit. While I have no right to promise anything beyond my own vote, I feel that Congress will, at the proper time, give all the aid necessary, so as to make our exhibition transcend those of England, France, and Austria. In my own State of Maine a very lively interest is manifested, and I am sure that, at the proper time, a liberal appropriation will be made, as will be the case with all the other States. I have nothing further to say, other than, by my presence, I desire to express the great interest I have in the Centennial Exhibition.

Mr. LOWRY, of Iowa, moved that Mr. Blaine be invited to a seat on the floor; which was agreed to. After which,

Mr. MCNEIL, of Missouri, moved that the commission take a recess for ten minutes, for the purpose of permitting the members to be severally presented to Mr. Blaine; which was agreed to.

The time having expired, the commission re-assembled.

Mr. GOSHORN, of Ohio, chairman of the committee on plans and architecture, submitted a report of the action taken by the committee in regard to the number of buildings to be erected, preparation of the ground, advertising for preliminary sketches of plans for the centennial buildings, and other subjects, (Appendix No. 3;) which was read and laid on the table for future consideration.

Mr. EARLE, of Maryland, moved that the report of the committee on plans and architecture be considered this afternoon at 4 o'clock, in executive session; which was agreed to.

Mr. CAMPBELL, of Indiana, asked leave to offer a commission issued by the President to H. C. Johnson, as alternate commissioner for Indiana, which he moved to refer to the committee on credentials, with instructions to report to the commission when in executive session this afternoon; which was agreed to.

The report of Prof. W. P. Blake, special agent of the commission at Vienna, Austria, transmitted to the commission among the papers appended to the report of the executive committee, was read.

Mr. BYRD, of Alabama, offered the following, to wit:

*Resolved*, That the report of the executive commissioner, Hon. W. P. Blake, be referred to the executive committee, with instructions to publish so much of the same as may be deemed appropriate and useful to the Centennial Exhibition.

Which was read and adopted.

The report of the Women's Centennial Committee of Pennsylvania, with a brief account of the progress made by that committee in procuring subscriptions to the stock of the Centennial Board of Finance, which was also among the papers appended to the report of the executive committee, was read.

Mr. CLEVELAND, of New Jersey, offered the following, to wit:

*Resolved*, That the commission cordially accept the co-operation of the women of Pennsylvania, and gratefully recognize the value of the labor performed and proposed, and that the organization of women's associations for co-operation in the great work, in other States, by the commissioners in the States and Territories, respectively, is recommended.

Which was read and adopted.

Mr. CAMPBELL, of Indiana, from the committee on classification, submitted the following, to wit:

*To the United States Centennial Commission :*

The committee on classification ask to report the following changes in the system of notation, and recommend their adoption :

DEPARTMENTS.	GROUPS.	CLASSES.
I	10 — 19	100 — 199
II	20 — 29	200 — 299
III	30 — 39	300 — 399
IV	40 — 49	400 — 499
V	50 — 59	500 — 599
VI	60 — 69	600 — 699
VII	70 — 79	700 — 799
VIII	80 — 89	800 — 899
IX	90 — 99	900 — 999
X	100 — 109	1000 — 1099

By this notation the figures attached to the classes designate accurately the location of articles in departments, groups, and classes.

Respectfully submitted.

JOHN L. CAMPBELL,  
FREDERICK L. MATTHEWS.  
J. W. ALBERTSON.

Which having been read,

Mr. PRUYN, of New York, moved that the report be adopted ; which was agreed to.

Mr. BYRD, of Alabama, offered the following, to wit:

*Resolved*, That the board of finance be cordially invited to seats with the commission during its session, and that the secretary communicate to them this resolution.

Which was read and unanimously adopted.

Mr. CREIGH, of California, moved that the commission take a recess until 4 o'clock this afternoon ; which was agreed to.



## AFTERNOON SESSION.

PHILADELPHIA, *Wednesday, May 7, 1873.*

The hour of 4 o'clock having arrived, the commission re-assembled.

The PRESIDENT stated that the special order for this hour was to take up and consider the report of the committee on plans and architecture.

Mr. CREIGH, of California, moved that the special order be postponed for the purpose of permitting the committee on by-laws to make a report; which was agreed to.

Mr. CREIGH, of California, thereupon, from the special committee appointed in December last, to consider the subject of amending the by-laws, submitted a report, (Appendix No. 4;) which having been read,

Mr. MORRELL, of Pennsylvania, offered additional amendments to the by-laws; which having also been read,

Mr. PRUYN, of New York, moved that the report and additional amendments proposed be printed, and that the further consideration of the subject be postponed until to-morrow afternoon at 4 o'clock, and be made the special order for that hour; which was agreed to.

The commission then resumed the consideration of the report of the committee on plans and architecture for the Centennial Exposition. The question being on adopting the report,

Mr. PRUYN, of New York, offered the following:

*Resolved*, That the report of the committee on plans and architecture for the Centennial Exposition, now submitted, with the accompanying papers, and all other documents in possession of this commission in regard to plans, be transmitted to the Centennial Board of Finance for their action; as the initiative on this subject, in the judgment of this commission, rests with that corporation.

The yeas and nays were required by Mr. Pruyn, of New York, and seconded by Mr. Donaldson, of Idaho, and were as follows:

YEA.—Michigan, New York—2.

NAY.—Alabama, Arizona, California, Colorado, Connecticut, Dakota, District of Columbia, Florida, Georgia, Idaho, Indiana, Iowa, Kentucky, Louisiana, Maryland, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Texas, Utah, Vermont, Virginia, Washington Territory, West Virginia, Wisconsin—34.

So the resolution was not adopted.

The report of the committee was then adopted.

Mr. MORRELL, of Pennsylvania, from the executive committee, submitted the report of a joint committee appointed by the executive committee and by the Centennial Board of Finance, defining the rights and duties of each body under the acts of Congress, (Appendix No. 5;) which having been read, he offered the following:

*Resolved*, That the commission accepts the report of the committee of conference with the Centennial Board of Finance, as expressing in general the opinions of this commission upon the duties of the two corporations and the sentiment which should govern their relations.

The resolution was read and adopted.

Mr. ADAMS, of Florida, offered the following, to wit:

*Resolved*, That by the law creating the Centennial Commission it is made the duty of the commission to examine all plans submitted for buildings for the National Exposition of 1876, and to approve and adopt such plans as to their judgment seem best adapted to the uses of such Exposition; but that, in consideration of the intimate co-relation subsisting between the Centennial Commission and the Centennial Board

of Finance, the Centennial Commission do not deem it wise, nor will they willingly consent to the adoption of any such plan without the cordial concurrence therein of the Centennial Board of Finance.

Which having been read,

Mr. BYRD, of Alabama, moved that the resolution be referred to the executive committee; which was agreed to.

Mr. BYRD, of Alabama, offered the following, to wit:

*Resolved*, That the executive committee and officers of this commission be authorized and directed to deliver to the Centennial Board of Finance, organized under the act of Congress approved June 1, 1872, all stock-subscription books and all papers and records pertaining to the same.

Which was read and adopted.

Mr. BIRNEY moved that when the commission adjourns it will adjourn to meet to-morrow morning at ten o'clock, in this room; which was agreed to.

On motion the commission adjourned.

---

## SECOND DAY.

PHILADELPHIA, *Thursday, May 8, 1873.*

The commission met, pursuant to adjournment, at 10 o'clock a. m., this day, Hon. Jos. R. Hawley, president, in the chair.

The roll was called, and the following members answered to their names:

Alabama.—William M. Byrd, commissioner.

Arizona.—Richard C. McCormick, commissioner.

John Wasson, alternate.

California.—John Dunbar Creigh, commissioner.

Colorado.—N. C. Meeker, alternate.

Connecticut.—Joseph R. Hawley, commissioner.

Delaware.—John H. Rodney, commissioner.

District of Columbia.—Lawrence A. Gobright, alternate.

Florida.—John S. Adams, commissioner.

J. T. Bernard, alternate.

Georgia.—Lewis Waln Smith, alternate.

Idaho.—Thomas Donaldson, commissioner.

Illinois.—Frederick L. Matthews, commissioner.

Lawrence Weldon, alternate.

Indiana.—John L. Campbell, commissioner.

David M. Boyd, jr., alternate.

Iowa.—Robert Lowry, commissioner.

Kentucky.—Smith M. Hobbs, alternate.

Louisiana.—John Lynch, commissioner.

Edward Penington, alternate.

Maine.—Charles P. Kimball, alternate.

Maryland.—James T. Earle, commissioner.

Michigan.—James Birney, commissioner.

Minnesota.—J. Fletcher Williams, commissioner.

Missouri.—John McNeil, commissioner.

Samuel Hays, alternate.

Nebraska.—Henry S. Moody, commissioner.

Nevada.—William Wirt McCoy, commissioner.

James W. Haines, alternate.



New Hampshire.—Ezekiel A. Straw, commissioner.

New Jersey.—Orestes Cleveland, commissioner.

John G. Stevens, alternate,

New Mexico.—Eldridge W. Little, commissioner.

New York.—John V. L. Pruyn, commissioner.

North Carolina.—Jonathan W. Albertson, alternate.

Ohio.—Alfred T. Goshorn, commissioner.

Wilson W. Griffith, alternate.

Oregon.—Andrew J. Dufur, alternate.

Pennsylvania.—Daniel J. Morrell, commissioner.

Asa Packer, alternate.

Rhode Island.—George H. Corliss, commissioner.

Samuel Powel, alternate.

Tennessee.—William F. Prosser, alternate.

Texas.—William Henry Parsons, commissioner.

Utah.—Oscar G. Sawyer, alternate.

Vermont.—Middleton Goldsmith, commissioner.

Virginia.—Walter W. Wood, commissioner.

Washington Territory.—Elwood Evans, commissioner.

West Virginia.—Alexander R. Boteler, commissioner.

Andrew J. Sweeney, alternate.

Wisconsin.—David Atwood, commissioner.

Wyoming.—Robert H. Lamborn, alternate.

The minutes of yesterday's session were read and approved.

Mr. PRUYN, of New York, offered the following:

*Resolved*, That in view of the authority conferred by Congress on the Centennial Board of Finance, which has just entered upon its duties, to secure subscriptions to its capital stock, to be used in aid of the objects of the exhibition, this commission, from the information its members have obtained while in the discharge of their trust, deem it to be their duty very respectfully to urge upon that board the necessity of immediate and most energetic measures to secure, without delay, very large additional subscriptions in aid of the exhibition, not only for the erection of buildings, but also for the various general purposes for which funds will soon be urgently required; and that a failure to accomplish this will, in the judgment of this commission, seriously impair the character, the usefulness, and the results of the exhibition.

*Resolved*, That the chair appoint a committee to communicate the above resolution to the board of finance, when in session, and informally to interchange views on the subject with the members of that board, should they desire to do so.

Mr. GOSHORN, of Ohio, second vice-president, was called to the chair, and President Hawley took the floor. After the discussion,

Mr. MEEKER, of Colorado, seconded by Mr. Smith, of Georgia, moved to lay the resolution on the table; which was agreed to.

The yeas and nays were required by Mr. Pruyn, of New York, and seconded by Mr. Morrell, of Pennsylvania, and were as follows:

YEA.—Arizona, California, Colorado, Connecticut, Dakota, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Virginia, Washington Territory, West Virginia, Wisconsin—36.

NAY.—New Mexico, New York, North Carolina—3.

The resolution was not adopted.

Mr. RODNEY, of Delaware, announced the death of William T. Read,



commissioner from that State, and offered the following preamble and resolutions :

Whereas the Hon. William T. Read, Centennial Commissioner from Delaware, departed this life on the 27th day of January, A. D. 1873, in the eighty-first year of his age :

*Resolved*, That this commission has heard with regret of the death of our departed associate, the Hon. William T. Read, of Delaware, and lament that we shall be deprived of the aid which his extensive knowledge of the past history of our country would have enabled him to impart, and of his judgment and advice in the promotion of the success of the Centennial Exhibition.

*Resolved*, That these proceedings be placed upon the minutes of this commission.

Which were unanimously adopted.

Mr. RODNEY, of Delaware, presented to the commission a copy of the Life and Correspondence of George Read, of Delaware ; which was accepted and ordered to be placed in the library of the commission.

Mr. GOBRIGHT, of the District of Columbia, presented a communication from the Director of the United States Mint, the Hon. H. R. Linderman, stating that the space on the coins was all occupied, and not adapted for the purpose of commemorating great events as medals were, because coins were money, and he would suggest the preparation of a medal, at a value to be reached by all, so that it might be preserved as a memento of the event ; which being read, was ordered to be filed.

Mr. ALBERTSON, of North Carolina, offered the following :

*Resolved*, That a committee be appointed to express the sense of the loss the country and this commission have sustained in the death of Hon. James L. Orr, of South Carolina, a member of this body, and the minister of the United States to the Court of St. Petersburg.

Which was read and adopted.

The CHAIR appointed the following committee : Mr. Albertson, of North Carolina, Mr. Adams, of Florida, Mr. Kimball, of Maine.

Mr. MORRELL, of Pennsylvania, asked leave to amend, before final publication of the report of the executive committee, by inserting therein the names of the following States and Territories : Oregon, Arizona, Washington, New Hampshire, Connecticut, New Jersey, Delaware, Virginia, Michigan ; which was agreed to.

Mr. GOBRIGHT, of the District of Columbia, offered the following :

*Resolved*, That the subject of a commemorative medal be referred to \_\_\_\_\_ for further action in the premises.

Mr. LYNCH, of Louisiana, moved that the blank be filled by inserting the following words : "The committee on legislation," and that they report their action to the executive committee.

The resolution offered by Mr. Gobright was then adopted.

The secretary laid the following communication from the board of finance before the commission :

PHILADELPHIA, May 1, 1873.

*To the President and Members of the United States Centennial Commission :*

GENTLEMEN : I am directed to inform the commission that the directors of the Centennial Board of Finance, chosen by the stockholders at the annual election held on the 22d day of April, 1873, assembled on the 1st day of May, 1873, at 12 o'clock noon, at the rooms of the United States Centennial Commission, No. 904 Walnut street, in the city of Philadelphia, and organized, in accordance with law, by the election of John Welsh, of Pennsylvania, president ; William Sellers, of Pennsyl-



vania, first vice-president; William H. Appleton, of New York, second vice-president, and the appointment of Thomas Cochran, of Pennsylvania, as temporary secretary; and that the board of directors are now ready to receive any communication, and to enter upon the performance of the duties devolving upon them by the act of incorporation, approved June 1, 1872.

THOMAS COCHRAN.

*Secretary pro tem.*

Which was read and ordered to be filed.

Mr. MORRELL, of Pennsylvania, moved that the board of finance, together with the members of the board of State supervisors of Pennsylvania, be invited to meet the commission now in session; which was agreed to.

Mr. LOWRY, of Iowa, moved that a committee of three be appointed to wait on the members of the board of finance and board of supervisors, and inform them of the action of the commission; which was agreed to.

The CHAIR appointed Mr. Lowry, of Iowa, Mr. Straw, of New Hampshire, Mr. Lynch, of Louisiana, as the committee.

Mr. WILLIAMS, of Minnesota, presented a communication from Franklin B. Hough, of New York, relative to a history of the progress made by the United States during the past century; which being read,

Mr. PRUYN, of New York, moved that it be referred to the proper committee, when appointed; which was agreed to.

Mr. MORRELL, of Pennsylvania, presented a communication and petition recommending the appointment of Col. L. M. Montgomery as a special agent of the commission at London; which was read and referred to the committee on foreign affairs.

Also, a communication from Mr. S. S. JONES, relative to the contribution to the exhibition of a machine for the manufacture of wool; which was read and referred to the committee on classification.

Mr. MOODY, of Nebraska, moved that a recess be taken until 12.30 this afternoon; which was agreed to.

PHILADELPHIA, *May 8, 1873.*

At the hour of 12.30 the commission re-assembled.

Mr. LOWRY, of Iowa, chairman of the committee appointed to wait on the directors of the Centennial Board of Finance, reported that they had performed that duty, and the directors would be pleased to meet the commission at 1.30 o'clock this afternoon.

Mr. CHARLES P. KIMBALL, of Maine, not having presented his credentials, Mr. Pruyn, of New York, moved that Mr. Kimball, alternate commissioner from Maine, be recognized as a member of this body, the commission having already been notified of his appointment; which was agreed to.

Mr. EARLE, of Maryland, moved that the vote by which the consideration of the report of the committee on credentials was fixed for executive session be reconsidered. Not agreed to.

Mr. LYNCH, of Louisiana, asked leave to attach his name to the report of the executive committee, not having been present at the time the report was presented and read to the commission; which was agreed to.

Mr. LOWRY, of Iowa, chairman of the committee on credentials, submitted the following report:

*To the President and Members of the United States Centennial Commission :*

GENTLEMEN: Your committee, to whom were referred the credentials of Franklin C. Johnson, esq., as alternate commissioner from Indiana, respectfully report :

That they have given the subject a very careful consideration, and find that the credentials appear to be authentic, and would entitle Mr. Johnson to membership in the commission if there were a vacancy from that State.

They also find that, under and by authority of the act of March 3, 1871, David M. Boyd, jr., esq., was nominated by the governor of Indiana, and duly appointed and commissioned by the President of the United States alternate commissioner for that State, his commission bearing date previous to March 3, 1872; that he duly presented the same at the first meeting and organization of the commission, and that it was referred to your committee on credentials, and by the committee reported upon favorably March 5, 1872, when Mr. Boyd duly took his seat as a member and commissioner alternate to represent Indiana; and as such has since continued to represent that State, having been present at every session, actively engaged in the work thereof, and, as a member of some of the most important committees, rendering valuable services.

Although Mr. Boyd is a native of the State of Indiana, it appears that at the time of his appointment he resided in Philadelphia as one of the officers of the Pennsylvania Railroad.

The committee have also examined the accompanying letter of Governor Hendricks, of Indiana, to the President, asking for the appointment of Mr. Johnson to fill a vacancy which he "supposed" to exist by reason of the non-residence of Mr. Boyd within the State; and the committee fail to concur with him in the interpretation of the act of June 1, 1872, under which the "supposed" authority to appoint is claimed.

Neither the act of March 3, 1871, nor that of June 1, 1872, especially provides how a vacancy shall be ascertained; and in the absence of any such express provision, the committee think that (except it be in the case of death, personal resignation, or perhaps under judicial proceedings,) the commission itself should alone have the power to ascertain such vacancies; and by it only can the question of membership be inquired into and determined.

This view seems to be fully sustained in Cushing's Law and Practice, which is the recognized parliamentary law of the country, and has been adopted in our by-laws as the authority which may be appealed to by the commission in deciding questions coming within the scope of that work.

The act of March 3, 1871, under which Mr. Boyd was appointed, does not define *residence* or *citizenship* of the State to be represented as a qualification, but does specifically declare, in regard to the commission therein provided, that its "functions shall continue until the close of the exposition."

It is well known to the commission that Mr. Boyd was, and has continued since to be, a member of the commission *constituted* under said act.

Several of the governors, by authority of said act, saw proper to nominate as alternates to represent their respective States or Territories, gentlemen residing at a locality convenient to the work of the commission, who were non-residents of the States they represented, and who



have since continued members of the commission ; and the question now under consideration could not have arisen previously to the passage of the act of June 1, 1872. But, with a full knowledge of the facts and circumstances under which that act was framed and passed, together with a careful examination of the act itself, your committee are convinced that it was not intended to affect the status of the commissioners as then appointed and acting ; and that it does not effect the removal of any of the members of the commission as it was then constituted. The eleventh section thereof, on the contrary, actually creates the commission, as then constituted, a body-politic, or corporation, thus virtually ratifying and confirming the same.

Where an act is not entirely free from doubt, the facts and circumstances under which it was framed and passed, and the objects to be attained, can frequently be adduced with advantage as aids in construing its true intent and meaning.

The act of June 1, 1872, was framed by this commission, (through its committee,) and passed without any change being made, so far, at least, as to affect the point in question.

The object having been to obtain such legislation as would enable the commission to practically proceed with the objects of their appointment, (not to prevent any of them from so doing,) two of the most important purposes being—

1. A general financial scheme ;
2. To create the commission, as then constituted, a body-politic.

It was believed at the time that the power of the governors to nominate expired with the year designated as the limitation in act of March 3, 1871 ; and as one or two of the commissioners had been nominated and appointed a few days after the year had expired, the twelfth section confirms all appointments made since March 3, 1872.

Moreover, as various States and Territories had made no nominations at all, in consequence of which several vacancies then existed ; and the act of March 3, 1871, contained no provision to fill vacancies caused either by death, resignation, removal from the country, or otherwise, the same section provides that “ all vacancies *now* existing, or *which may hereafter exist*, whether by death, resignation, removal from the State or Territory, or otherwise, shall be filled at any time hereafter.”

This certainly cannot, with any degree of fairness, be construed to apply to any of the members then constituting the commission, and whose places of abode were then, and have since continued to be, the same as when they were appointed. However it may be considered to affect a commissioner who may since have actually removed from his State, one who has not changed his residence since his appointment a year previously cannot be compelled to lose his right of membership by reason of removal from State of residence, when no such removal has occurred, as is the fact in the case of Mr. Boyd.

It should be borne in mind that some of the members of the commission who framed this act were, at the time, non-residents of the State they represented, and it would be too great an inconsistency to believe they had any thought, much less an intention, of thereby causing a vacancy in their own cases.

The question at issue, then, is, whether in the case of a commissioner or alternate nominated and appointed before March 2, 1872, duly commissioned by the President of the United States, and since admitted to, and regularly acting in, the commission as a member thereof, who still holds his commission unrecalled and uncanceled ; who has neither died nor resigned, nor had his seat declared vacant by the commission, and



who is an active member in good standing, as your journal of this very session shows Mr. Boyd to be, a vacancy exists which another person could be entitled to fill; and your committee, in view of the facts and circumstances presented in this report, can arrive at no other conclusion than the following, to wit, that in such a case no vacancy exists.

Your committee therefore respectfully report that, as there is no vacancy in the commission from the State of Indiana, Mr. Johnson is not entitled to be admitted as a member of the commission.

Respectfully submitted.

ROBERT LOWRY.  
ORESTES CLEVELAND.  
D. J. MORRELL.  
JOSHUA NYE.  
W. H. PARSONS.

Which having been read,

Mr. SAWYER, of Utah, offered the following:

*Resolved*, That the report of the committee on credentials be adopted, and that, in accordance with the recommendation therein contained, Mr. Franklin C. Johnson is not entitled to membership in this body as alternate commissioner from the State of Indiana, as there exists no vacancy from that State.

Pending the consideration of the resolution the directors of the Centennial Board of Finance and Board of State supervisors were announced and introduced to the commission by Mr. Lowry, of Iowa, chairman of the committee, who said:

That he was glad to introduce the members of the Centennial Board of Finance and the members of the State board of supervisors.

The gentlemen composing the board of finance were then introduced. The members of the board are as follows: Mr. John Welsh, Mr. J. Edgar Thomson, Mr. W. V. McKean, Mr. D. M. Fox, Mr. E. H. Fitler, Mr. Thos. Cochran, Mr. N. Parker Shortridge, Mr. E. T. Steele, Mr. C. W. Cooper, Mr. Jos. Patterson, Mr. Wm. Sellers, Mr. Saml. M. Felton, Mr. Clement M. Biddle, Mr. Jas. M. Robb, Mr. John Wanamaker, and Mr. John Price Wetherill, Pennsylvania; Mr. Robt. M. Patterson, Alabama; Mr. Benj. F. Allen, Iowa; Mr. John Cummings, Massachusetts; Mr. A. S. Hewitt, New Jersey; Mr. John L. Barbour, Virginia; Mr. C. C. Washburne, Wisconsin; Mr. Wm. H. Appleton, New York; Mr. A. D. Bullock, Ohio; Mr. John Gorham, Rhode Island.

Of the board of supervisors: Ex-Governor Bigler, Mr. Alex. Henry, Mr. John O. James, Mr. H. Ewing, Mr. G. R. Messersmith.

President HAWLEY, of Connecticut, said that the commission were glad to receive the gentlemen of these two important bodies, and that they would be glad to give them any information, or receive any from them.

Mr. JOHN WELSH, president of the Centennial Board of Finance, acknowledged the courtesy of their reception, and said that many important matters were before the board, and they would persevere in pushing them to a successful termination.

Ex-Governor WILLIAM BIGLER, of the State board of supervisors, was then introduced, and spoke as follows:

GENTLEMEN: This is not the occasion to present reasons in favor of the American centennial celebration, and a world's exhibition in 1876, in this city; these have been settled. The celebration and exhibition is to come off. But it is an occasion to exchange mutual congratulations that this noble work has been undertaken, and undertaken with sur-



roundings so auspicious. There is enough in this presence to inspire confidence, if not to insure success. The presence of men from widely separated sections of our immense country is significant of a fixed purpose and lively zeal in the work which admits of no failure. I see men here from the East, whence the tide of population commenced to flow over our vast country. I see them from the far-off regions of the South; from every State on the Pacific slope, and from nearly all the intermediate Territories and States.

Why, gentlemen, Pennsylvania is equal in herself, if need be, to that work on a grand scale; but the celebration must be national in order to come up to the full measure of its significance. The nation, through Congress, has put down the land-marks for this work and signified its good-will. The nation, through Congress, if needs be, will furnish something far more substantial than good-will. But, gentlemen, those who have undertaken this work must not suppose that they are on a bed of roses; they will find thorns, and plenty of them. The way will not be entirely smooth; obstacles may present themselves, but you have the brains and the courage to surmount them all. What we witness at Vienna just now is significant of the dangers of delay in the work, and the experience of nations is full of useful lessons for us.

Some allow themselves to think they see trouble or delay because some difficulty has arisen as to the form of the State appropriation. There is no sufficient ground for apprehension on this subject. It is not at all certain that the institutions upon whom was assessed a tax for a portion of the sum appropriated will fall into the grave error of setting themselves up against the law; but, be that as it may, the State of Pennsylvania has signified her purpose to invest a million of dollars in that part of the building which she is to own, and I shall no more doubt that she will do this in good faith than I shall doubt the performance of any other obligation she has ever made.

The celebration is to be national, and the exposition must be on a scale equal if not in advance of anything of the kind the world has ever witnessed. The interests it will awaken and the lessons it will teach will remain fresh for generations. Gentlemen, the earth will never again be entirely covered with a flood; but I venture to predict that this beautiful city in the year 1876 will be literally submerged by a mass of humanity, which will come down upon it from all parts of the globe.

President HAWLEY, of Connecticut, said that he wanted all the Philadelphians present to give their views on the great end before the commission, and he called on Mr. Welsh, the president of the board of finance, to suggest speakers.

Hon. D. M. Fox, of the board of finance, being called upon, said that, as the greatest republic that ever existed under the sun is soon to celebrate its one hundredth birthday, he had no doubt whatever of its great success, and the responses which had come up from all parts of the country confirmed him in his belief.

Mr. PARSONS, of Texas, said that money composed the sinews of war, and as he saw before him the representative men of Pennsylvania and the country, who were pledged to the raising of funds for the carrying on of the work of the commission, he felt sure of the ultimate success of the affair. He disclaimed the idea that this is a "Fourth of July celebration for Philadelphia," and said that the great United States are pledged now to the result. They have said that this is to be an exhibition of the industries of this country, and now, in the words of Richelieu, "There is no such word as fail."



Mr. JOSEPH PATTERSON, of the board of finance, said that he believed that the success of the exposition is now assured. He spoke of the great results to be attained by this celebration, and the tremendous influx of visitors, and declared that there must be "no such thing as fail," and one of the most important matters to be considered is the fact that people from all parts of the world will be here to see the workings of a republican government.

Mr. DUFUR, of Oregon, stated that he had not the slightest doubt that the States of the Pacific coast would take all the stock of the board of finance assigned to them, and would show that they realized the fact that they are citizens of this great common country.

Mr. EWING, of the State board of supervisors, called the attention of the commissioners to the fact that they are now on the very soil where the Declaration of Independence was promulgated, and urged them to be inspired by the spirit which inspired their Revolutionary predecessors.

Mr. STRAW, of New Hampshire, who was introduced as the head of the greatest cotton-manufacturing establishment in the United States, said that his State has already taken the initiative in appointing a commission, and providing for the exhibition of her products in the exposition, and he had no doubt that when the time came there would be no delay in making the necessary pecuniary appropriation.

Mr. JOHN EDGAR THOMSON, of the board of finance, being called on, said that he was not one who believed in making speeches, but in action.

General HAWLEY then called upon Mr. W. V. McKean, of the board of finance, who expressed his gratification at so full a meeting of the Centennial Commission, also at meeting the Pennsylvania supervisors under the million appropriation bill, and was particularly pleased to hear so strong an expression of confidence from Governor Bigler, that the State would do her full duty by the exposition, as no one understood better than the governor the patriotic feeling of the people of the Commonwealth. The Centennial Board of Finance was organized and at work, and would expect the commission to inform them without delay how many acres of buildings the exposition would need, how much money the buildings would cost, and how much money the other expenses would require—and then the board of finance would exert itself with all the industry, energy, and influence it could command to raise the money. And their effort to raise it would not be confined within the limits of Philadelphia, or Pennsylvania, but they would go actively and confidently to the people of the whole country. They had never permitted themselves to believe that the other prosperous communities of the United States would do less than Philadelphia and Pennsylvania had tried to do. There were some communities not in a condition to furnish money, but there are many more that can. The prosperous and wealthy portions of the country they would appeal to with all their force. They would ask New York City, in full confidence that the great metropolis of the nation would do her full share in making the nation's anniversary exposition what it should be. That city is too great, too high in rank, importance, and dignity to do less than is worthy of her high place. Boston has just been swept by fire, but the board of finance have the strongest belief that neither she nor Massachusetts will forget the days of the "Boston Port Bill," and of "General Warrants." The same with Cincinnati, Saint Louis, Chicago, and the great West, and all other portions of the country.

The board feel strong in the conviction that the lack of subscriptions to the stock in other States arises, in some of them, partly from the fact



that the people of this country are difficult to move about any event that is not *immediately at hand*, and partly because no effective means had been used to place the exposition before the distant public in its true importance and dignity as a national event of the grandest character. The most active efforts will now be made, and the board will not be convinced that the American people at large will not respond as Philadelphia and Pennsylvania have done until these efforts have failed; and they do not regard failure in an appeal to the country as within reasonable probabilities on such an occasion.

New York was then called on, and Mr. Pruyn, commissioner from that State, rose to respond. He said that unless he believed in the aims, objects, and success of this matter he would not be here. He was of opinion that the work demands energetic, active, and thorough action. He had no doubt that when New York is properly appealed to and thoroughly canvassed, a large sum of money can be secured; but it must be recollected by all that it had been said by Pennsylvania Representatives in Congress that Philadelphia and Pennsylvania would be responsible for the finances of the exposition. He was of the opinion that Congress ought to make a liberal appropriation for the affair, but this had not been done, and the middle of 1874 will be too late to make the pecuniary arrangements, and it is necessary to go to work at once to raise the necessary funds.

Hon. SAMUEL RANDALL said that he hoped to have an opportunity, at no distant time, to work and vote in Congress for the success of the enterprise. He represented in Congress the district in which is situated Independence Hall. He said that the commission have the unlimited confidence of the people of Pennsylvania and of the United States.

Mr. JOHN WELSH, president of the Centennial Board of Finance, returned thanks for the encouragement received by the addresses he had heard, and expressed his own perfect confidence in the final success of the enterprise.

The conference having terminated, on motion of Mr. Byrd, of Alabama, the commission adjourned until 4 o'clock p. m.

---

PHILADELPHIA, *May 8, 1873*—4 p. m.

The commission met pursuant to adjournment.

President HAWLEY, of Connecticut, in the chair.

The roll being called, the following members answered to their names:

Alabama.—William M. Byrd, commissioner.

Arizona.—Richard C. McCormick, commissioner.

John Wasson, alternate.

California.—John Dunbar Creigh, commissioner.

Colorado.—N. C. Meeker, alternate.

Connecticut.—Joseph R. Hawley, commissioner.

Dakota.—George A. Batchelder, commissioner.

Delaware.—John H. Rodney, commissioner.

District of Columbia.—Lawrence A. Gobright, alternate.

Florida.—John S. Adams, commissioner.

J. T. Bernard, alternate.

Georgia.—Thomas Hardeman, jr., commissioner.

Illinois.—Frederick L. Matthews, commissioner.

Indiana.—John L. Campbell, commissioner.

Iowa.—Robert Lowry, commissioner.

Kentucky.—Smith M. Hobbs, alternate.

Louisiana.—John Lynch, commissioner.

Edward Penington, alternate.

Maryland.—James T. Earle, commissioner.

Michigan.—James Birney, commissioner.

Minnesota.—J. Fletcher Williams, commissioner.

Missouri.—John McNeil, commissioner.

Nebraska.—Henry S. Moody, commissioner.

Nevada.—William Wirt McCoy, commissioner.

James W. Haines, alternate.

New Hampshire.—Ezekial A. Straw, commissioner.

New Jersey.—Orestes Cleveland, commissioner.

John G. Stevens, alternate.

New Mexico.—Eldridge W. Little, commissioner.

New York.—John V. L. Pruyn, commissioner.

North Carolina.—Jonathan W. Albertson, alternate.

Ohio.—Alfred T. Goshorn, commissioner.

Wilson W. Griffith, alternate.

Oregon.—James W. Virtue, commissioner.

Pennsylvania.—Daniel J. Morrell, commissioner.

Asa Packer, alternate.

Rhode Island.—George H. Corliss, commissioner.

Samuel Powel, alternate.

Tennessee.—Thomas H. Coldwell, commissioner.

William F. Prosser, alternate.

Texas.—William Henry Parsons, commissioner.

Utah.—Oscar G. Sawyer, alternate.

Vermont.—Middleton Goldsmith, commissioner.

Virginia.—Walter W. Wood, commissioner.

Washington Territory.—Elwood Evans, commissioner.

West Virginia.—Alex. R. Boteler, commissioner.

Andrew J. Sweeney, alternate.

Wisconsin.—David Atwood, commissioner.

Wyoming.—Robert H. Lamborn, alternate.

The regular order of business, which provided for the consideration of the by-laws, was, on motion of Mr. Pruyn, suspended, and the consideration of the report of the committee on credentials was resumed, the resolution of Mr. Sawyer being before the commission.

Mr. LOWRY, of Iowa, moved that the report be referred back to the committee on credentials; which was not agreed to.

Mr. PRUYN, of New York, then offered as a substitute for Mr. Sawyer's resolution the following:

*Resolved*, That it does not belong to this commission to determine whether or not a vacancy exists in the delegation from any State, and that this commission has no right to refuse to receive as one of its members a person holding a commission in due form from the President of the United States, issued pursuant to the act of Congress under which this commission is organized.

The resolution was not adopted.

Mr. BYRD, of Alabama, moved to suspend further consideration of the subject in order to give Mr. F. C. Johnson, the claimant to a seat as alternate commissioner from Indiana, an opportunity to be heard in person, and that Mr. Campbell, of Indiana, be requested to inform him of this action of the commission; which was agreed to.

Mr. CAMPBELL, of Indiana, reported his inability to find Mr. Johnson



in the building, and requested to be excused from voting on the resolution before the commission; which was agreed to.

Mr. BYRD then offered the following as a substitute for Mr. Sawyer's motion:

*Resolved*, That the commission postpone a decision upon the admission of F. C. Johnson as the alternate commissioner from Indiana, and directs that a statement of the questions involved be immediately submitted to the President of the United States, asking special attention to the second section of the act of March 3, 1871, respectfully requesting a reconsideration of the subject, and that copies of the communications addressed to the President be sent to the governor of Indiana; which having been read, and the question being on the adoption of the resolution,

The yeas and nays were required by Mr. Byrd, of Alabama, and seconded by Mr. Sawyer, of Utah, and were as follows:

YEA.—Alabama, Arizona, Connecticut, Delaware, District of Columbia, Kentucky, Maine, Michigan, New Jersey, New Mexico, Rhode Island—11.

NAY.—California, Colorado, Dakota, Florida, Georgia, Idaho, Illinois, Iowa, Louisiana, Maryland, Minnesota, Missouri, Nebraska, Nevada, New York, North Carolina, Ohio, Oregon, Pennsylvania, Tennessee, Texas, Utah, Vermont, Virginia, Washington Territory, West Virginia, Wisconsin, and Wyoming—28.

The resolution offered by Mr. Byrd was not adopted.

The question recurring on the adoption of the original motion offered by Mr. Sawyer,

The yeas and nays were required by Mr. Byrd, of Alabama, and seconded by Mr. Pruyn, of New York, and were as follows:

YEA.—Arizona, California, Colorado, Dakota, Delaware, Florida, Georgia, Idaho, Illinois, Iowa, Louisiana, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, New Jersey, New Mexico, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Virginia, Washington Territory, West Virginia, Wisconsin, and Wyoming—33.

NAY.—Alabama, District of Columbia, Kentucky, Nevada, and New York—5.

The resolution offered by Mr. Sawyer was finally adopted.

Mr. McCORMICK, of Arizona, offered the following resolution:

*Resolved*, That the secretary of the commission be, and is hereby, instructed respectfully to inform the President of the United States and governor of Indiana that in the judgment of the commission there is, under the acts of Congress, no vacancy in the office of alternate commissioner from the State of Indiana, and that therefore it is not in the power of the commission to admit to a seat Mr. F. C. Johnson, commissioned as alternate from Indiana under date of February 1, 1873; and that a copy of the report of the committee on credentials be forwarded, together with the said communication.

Mr. ADAMS, of Florida, moved to amend by inserting the word "solicitor," so as to read "secretary and solicitor;" which was not agreed to.

The question being on the adoption of the resolution offered by Mr. McCormick, the yeas and nays were required by Mr. Pruyn, of New York, and seconded by Mr. Byrd, of Alabama, and were as follows:

YEA.—Arizona, Colorado, Dakota, Delaware, Florida, Georgia, Idaho, Illinois, Iowa, Louisiana, Maryland, Michigan, Minnesota, Missouri, Nebraska, New Jersey, New Mexico, North Carolina, Ohio, Rhode Island,

Tennessee, Texas, Utah, Vermont, Washington Territory, West Virginia, Wisconsin, and Wyoming—28.

NAY.—Alabama, California, District of Columbia, Kentucky, Maine, Nevada, New York, Oregon, and Virginia—9.

The resolution offered by Mr. McCormick was adopted.

Mr. LOWRY, of Iowa, moved to adjourn until the following day at 10 o'clock; which was not agreed to.

Mr. HOBBS, of Kentucky, offered the following resolution:

Whereas the American Medical Association is now in session at Saint Louis, Mo.; and

Whereas that body is composed of men of learning and standing, living in every State, county, and almost in every neighborhood in the Union, and who are capable of exercising vast influence in advancing the cause of the Centennial Exposition to be held in Philadelphia in 1876, and also in furnishing data and facts that will be of great interest and to mankind: Therefore, be it

*Resolved*, That a committee be appointed by the Chair to correspond with that body and ask it to co-operate with this commission in its projected exposition.

Which was adopted.

The PRESIDENT announced that, under the resolution just adopted, he had appointed as the committee:

Mr. HOBBS, of Kentucky, Mr. DUFUR, of Oregon, Mr. KIMBALL, of Maine.

Mr. DONALDSON, of Idaho, then moved that the commission adjourn until to-morrow morning at 10 o'clock; which was agreed to.

### THIRD DAY.

PARLOR C, CONTINENTAL HOTEL,  
*Philadelphia, Friday, May 9, 1873.*

The commission met at 10 o'clock this morning, pursuant to adjournment, President HAWLEY in the chair.

The roll was called, and the following members answered to their names:

Alabama.—William M. Byrd, commissioner.

Arizona.—Richard C. McCormick, commissioner.

California.—John Dunbar Creigh, commissioner.

Colorado.—J. Marshall Paul, commissioner.

N. C. Meeker, alternate.

Connecticut.—Joseph R. Hawley, commissioner.

Dakota.—George A. Batchelder, commissioner.

District of Columbia.—Lawrence A. Gobright, alternate.

Florida.—John S. Adams, commissioner.

J. T. Bernard, alternate.

Georgia.—Lewis Waln Smith, alternate.

Idaho.—Thomas Donaldson, commissioner.

Illinois.—Frederick L. Matthews, commissioner.

Indiana.—John L. Campbell, commissioner.

Iowa.—Robert Lowry, commissioner.

Kansas.—George A. Crawford, alternate.

Kentucky.—Smith M. Hobbs, alternate.



Louisiana.—John Lynch, commissioner.

Edward Penington, alternate.

Maine.—Charles P. Kimball, alternate.

Maryland.—James T. Earle, commissioner.

Michigan.—James Birney, commissioner.

Minnesota.—J. Fletcher Williams, commissioner.

Missouri.—Samuel Hays, alternate.

Nebraska.—Henry S. Moody, commissioner.

Nevada.—William Wirt McCoy, commissioner.

James W. Haines, alternate.

New Jersey.—Orestes Cleveland, commissioner.

New Mexico.—Eldridge W. Little, commissioner.

New York.—John V. L. Pruyn, commissioner.

North Carolina.—Jonathan W. Albertson, alternate.

Ohio.—Alfred T. Goshorn, commissioner.

Oregon.—Andrew J. Dufur, alternate.

Pennsylvania.—Daniel J. Morrell, commissioner.

Rhode Island.—George H. Corliss, commissioner.

Samuel Powell, alternate.

Tennessee.—Thomas H. Coldwell, commissioner.

William F. Prosser, alternate.

Texas.—William Henry Parsons, commissioner.

Utah.—Oscar G. Sawyer, alternate.

Vermont.—Middleton Goldsmith, commissioner.

Virginia.—Walter W. Wood, commissioner.

Washington Territory.—Elwood Evans, commissioner.

West Virginia.—Alexander R. Boteler, commissioner.

Andrew J. Sweeney, alternate.

Wisconsin.—David Atwood, commissioner.

Wyoming.—Robert H. Lamborn, alternate.

The minutes of yesterday's session were read and adopted.

Mr. BYRD, of Alabama, offered the following:

*Resolved*, That the members of the board of supervisors of the State of Pennsylvania be invited to seats in the commission during its sessions, and that the secretary communicate this resolution to the said board.

Which was read and unanimously adopted.

Mr. COLDWELL, of Tennessee, moved that the election of the officers of the commission be made the special order for to-morrow morning at 11 o'clock; which was agreed to.

The PRESIDENT submitted a communication from the Women's Centennial Executive Committee of Pennsylvania, soliciting the commission to meet with their organization at some time and place to be designated by the commission, and informing the commission that their body is now in session at No. 904 Walnut street, where any communication would be received.

The communication was read.

Mr. COLDWELL, of Tennessee, moved that a committee of five be appointed to wait on the ladies' committee and extend to them the thanks of the commission for their patriotic services in procuring subscriptions in aid of the cause; which was agreed to.

The PRESIDENT appointed Messrs. Sweeney, of West Virginia, Prosser, of Tennessee, Meeker, of Colorado, Penington, of Louisiana, and Bernard, of Florida, the committee.

The PRESIDENT stated that action upon the report of the committee on by-laws being in order, that subject would be now considered in executive session, pursuant to the order of the commission.

Mr. BYRD, of Alabama, moved that the vote directing the consideration of this subject in executive session be reconsidered; which was not agreed to.

The commission thereupon went into executive session, and proceeded to the consideration of the report of the committee on by-laws.

The first clause of the by-laws, as recommended by the committee, was read; and the question being on its adoption,

Mr. CORLISS, of Rhode Island, moved that the proposed by-laws now under consideration be laid upon the table; which was agreed to.

Mr. EARLE, of Maryland, moved that we do now proceed to the consideration of the by-laws now existing, and that they be separately read and re-adopted or amended, as the commission may determine; which was agreed to.

Article I was then read and re-adopted.

Article II was read; and the question being on its re-adoption,

Mr. CAMPBELL, of Indiana, moved that the article be amended by striking out the word "thirteen," and inserting in place thereof the words "a majority of the;" which was agreed to.

The article, as amended, was adopted.

Article III was then read; and the question being on its re-adoption,

Mr. KIMBALL, of Maine, moved that the article be amended by striking out the words "may participate in the debates and serve on committees," and inserting, in place thereof, the words "shall have all the powers of a commissioner;" which was agreed to.

The article, as amended, was then adopted.

Article IV was then read; and the question being on its adoption,

Mr. CREIGH, of California, moved that the article be amended by striking out the words "they shall be elected at the first stated meeting. The terms of the officers then elected shall expire on the first Wednesday of May, 1873; after which time the officers elected shall hold for one year;" and inserting, in place thereof, the words, "Elections shall be by ballot, and shall be held during the annual session of the commission in May, on such day of the session as the commission shall during its session designate, notice of which shall be given in open session at least one day preceding the holding the election;" which was agreed to.

Mr. MORRELL, of Pennsylvania, moved to further amend by inserting after the words "vice-presidents" the words "and secretary," and by striking out the word "*and*" immediately preceding the word "vice-presidents;" which was agreed to.

Mr. MORRELL moved further to amend the article by striking out the words "all of whom shall be chosen from among the members of this commission;" which was agreed to.

Mr. COLDWELL, of Tennessee, moved to further amend the article by striking out the words "five vice-presidents," and inserting, in place thereof, the words "six vice-presidents;" which was agreed to.

The article, as finally amended, was agreed to.

Article V was read.

Mr. SAWYER, of Utah, moved that Article V be stricken out; which was agreed to.

Article VI was read.

Mr. MORRELL, of Pennsylvania, moved that Article VI be stricken out; which was agreed to.

Article VII was then read; and the question being on its re-adoption,



Mr. CREIGH, of California, moved that the article be stricken out, and that the following be adopted as the first clause of a new article, to wit:

An executive committee, to consist of thirteen members, shall be elected at the regular annual meeting of the commission, who shall hold their offices one year, and until their successors are elected.

Mr. COLDWELL, of Tennessee, moved to amend the substitute by striking out the word "thirteen," and inserting, in place thereof, the word "nine;" which was not agreed to.

The motion was then agreed to.

Mr. CREIGH, of California, moved to add to the article just adopted the following:

When duly convened, seven members shall constitute a quorum for business; it shall elect its own chairman, appoint its own clerk, and such agents and employés as it shall deem necessary, and define their duties.

Mr. DONALDSON, of Idaho, moved to amend by striking out the word "seven," and inserting, in place thereof, the word "five;" which was agreed to.

The motion, as amended, was then agreed to.

The question still being on the article as amended,

Mr. CREIGH, of California, moved that the article be further amended by adding the words:

The committee shall cause to be kept a journal of all its proceedings, transactions, and votes, shall have power to make such rules and regulations for its own government as it may deem proper, shall act without delay on all matters referred to it by the commission, and make report thereon to the commission when in open session, shall have during the recess of the commission all the executive and administrative authority of this commission, which can be delegated to such committee in preparing for the conducting, regulating, and managing the exhibition to be held in 1876. All which proceedings, transactions, rulings, and journal shall be reported fully to the commission at the commencement of each session; also, when requested so to do by the commission, for its inspection and approval.

Mr. PRUYN, of New York, moved to amend the amendment by striking out all after the words "open session" in the fifth line, and inserting, in place thereof, the following:

During the sessions of the commission, the committee shall have all the powers usually exercised by the executive committees of corporate bodies; and in the recess of the commission, shall have all the powers and authority of this commission which can be delegated to such committee of its own body. In case of a vacancy in the committee during the recess of the commission, the same shall be filled by the president until action shall be taken thereon by the commission.

Which was agreed to unanimously.

Mr. CREIGH, of California, moved to further amend the article by adding the following:

The rulings of the commission on any subject connected with said exhibition shall be followed and carried out by the executive committee, and all acts and transactions of said committee shall be subject to review and approval by the commission, as provided by acts of Congress of March 3, 1871, and June, 1872.

Mr. DONALDSON, of Idaho, moved to amend the amendment by striking out all after the words "executive committee;" which was agreed to.

The amendment, as amended, was agreed to.

Mr. CREIGH, of California, moved to further amend the article by adding the words:

The papers, books, and journal of its proceedings shall at all times be subject to examination by the commission or by any member of the commission.

The standing and other committees shall report to the executive committee, when so requested, (provided that it is not during the session of the commission,) the progress of the work of such committee.

The president of the executive committee is authorized to refer to any committee such matters as may come before it, and which should appropriately have been, or ought to be, referred to a committee, during the recess of the commission.

Which was agreed to.

Mr. CREIGH, of California, moved to further amend by adding the words—

The President shall not be a member of any committee except the executive committee.

Mr. CAMPBELL, of Indiana, moved to amend the amendment by striking out all after the words “the president shall,” and inserting, in place thereof, the words, “be ex-officio a member of the executive committee;” which was agreed to.

Mr. CREIGH, of California, moved further to amend the article by adding the following words :

The executive committee shall, at the beginning of each session of the commission, make full report of the proceedings of the committee.

Which was agreed to.

The article, as finally amended, was adopted.

Mr. SWEENEY, from the committee appointed by the commission to confer with the Women's Centennial Committee of Pennsylvania, submitted a verbal report, and recommended the adoption of the following preamble and resolutions :

Whereas it is desirable to secure the co-operation of the women of the United States in the great work of celebrating the one hundredth anniversary of American Independence, by an international exhibition and other ceremonies, in the year 1876 : Therefore, be it

*Resolved*, That the following persons and their associates are hereby authorized and constituted, by this commission, as the “Women's branch of the United States Centennial Commission,” with power to appoint assistants and agents throughout the several States and Territories for the purpose of securing subscriptions of stock, and otherwise aiding in the work of carrying out the national and patriotic purposes contemplated by this International Exhibition: Mrs. E. D. Gillespie, Mrs. John Sanders, Mrs. J. Edgar Thomson, Mrs. Aubrey H. Smith, Miss McHenry, Mrs. Charles J. Stillé, Miss Elizabeth Gratz, Mrs. John W. Forney, Mrs. Emily R. Buckman, Mrs. Richard P. White, Mrs. Henry Cohen, Mrs. Matthew Simpson, Mrs. Huldah Justice.

*Resolved*, That a copy of this preamble and resolution be furnished to the persons above named, and that the members of this commission will afford such aid and assistance to the “Women's branch of the Centennial Commission” as may be in their power in their several States and Territories.

A. J. SWEENEY.

WM. PROSSER.

N. C. MEEKER.

EDWARD PENINGTON.

J. T. BERNARD.

Which were read ; and the question being on their adoption,

Mr. COLDWELL, of Tennessee, moved that the further consideration of the resolutions be postponed, and that they be made the special order for 12 o'clock noon to-morrow ; which was agreed to.

Mr. BYRD, of Alabama, moved that the invitation to the commission to meet the ladies' committee on Monday afternoon next at 4 o'clock be accepted ; which was agreed to.

Mr. COLDWELL, of Tennessee, moved that when the commission adjourn it will adjourn to meet this afternoon at 4½ o'clock.

Mr. CREIGH, of California, moved to fix the time at 5 o'clock.



The PRESIDENT put the question on fixing the hour for re-assembling at 5 o'clock; and it was not agreed to.

The motion to fix the time for re-assembling at 4½ o'clock this afternoon, was agreed to.

On motion, the commission adjourned.

#### AFTERNOON SESSION.

PHILADELPHIA, *May 9, 1873.*

The hour of 4½ o'clock having arrived, the commission re-assembled.

The roll was called and the following members answered to their names:

Alabama.—William M. Byrd, commissioner.

Arizona.—Richard C. McCormick, commissioner.

John Wasson, alternate.

California.—John Dunbar Creigh, commissioner.

Colorado.—J. Marshall Paul, commissioner.

N. C. Meeker, alternate.

Connecticut.—Joseph R. Hawley, commissioner.

Dakota.—George A. Batchelder, commissioner.

District of Columbia.—James E. Dexter, commissioner.

Florida.—John S. Adams, commissioner.

J. T. Bernard, alternate.

Georgia.—Lewis Waln Smith, alternate.

Idaho.—Thomas Donaldson, commissioner.

Illinois.—Frederick L. Matthews, commissioner.

Indiana.—John L. Campbell, commissioner.

Iowa.—Robert Lowry, commissioner.

Kansas.—George A. Crawford, alternate.

Kentucky.—Smith M. Hobbs, alternate.

Louisiana.—John Lynch, commissioner.

Edward Penington, alternate.

Maryland.—James T. Earle, commissioner.

Michigan.—James Birney, commissioner.

Minnesota.—J. Fletcher Williams, commissioner.

Missouri.—John McNeil, commissioner.

Samuel Hays, alternate.

Nebraska.—Henry S. Moody, commissioner.

Nevada.—William Wirt McCoy, commissioner.

James W. Haines, alternate.

New Jersey.—John G. Stevens, alternate.

New York.—John V. L. Pruyn, commissioner.

North Carolina.—Jonathan W. Albertson, alternate.

Ohio.—Alfred T. Goshorn, commissioner.

Oregon.—Andrew J. Dufur, alternate.

Pennsylvania.—Daniel J. Morrell, commissioner.

Rhode Island.—George H. Corliss, commissioner.

Samuel Powel, alternate.

Tennessee.—Thomas H. Coldwell, commissioner.

William F. Prosser, alternate.

Texas.—William Henry Parsons, commissioner.

Utah.—Oscar G. Sawyer, alternate.

Vermont.—Middleton Goldsmith, commissioner.

Washington Territory.—Elwood Evans, commissioner.

West Virginia.—Alexander R. Boteler, commissioner.

Andrew J. Sweeney, alternate.

Wisconsin.—David Atwood, commissioner.

Wyoming.—Robert H. Lamborn, alternate.

Mr. SMITH, of Georgia, moved that the privilege of the floor be extended to Hon. Wm. D. Kelley, and that he be invited to address the commission; which was agreed to.

Mr. KELLEY was thereupon introduced, and briefly addressed the commission.

The PRESIDENT then stated that the commission would now resume consideration of the by-laws.

ARTICLE VIII was read.

Mr. CREIGH, of California, moved that the following be adopted as a substitute for that article:

ARTICLE VIII. The president shall preside at all meetings of the commission, shall have all the authority and power of the presiding officer of a legislative body, shall appoint all committees (except the executive committee) unless otherwise ordered, shall call special meetings of the commission on his own motion or on the request of the executive committee, or at the request in writing of at least thirteen commissioners, of which meetings not less than thirty days' notice shall be given to each member by mail or telegraph. He shall be exempt from serving on all committees.

Which having been read, Mr. CAMPBELL, of Indiana, moved that the further consideration of the article be postponed for the present; which was agreed to.

Mr. BYRD, of Alabama, third vice-president, was called to the chair.

Mr. EARLE, of Maryland, offered the following as an additional article:

For the more efficient conduct and management of the business of the commission, the executive committee shall elect one of its own members as its chairman, who shall be known and recognized as director-general. He shall reside in Philadelphia, and give his entire time and attention to the business of the commission, and in aid of the operations of the Centennial Board of Finance, for which he shall receive an annual salary to be fixed by the executive committee;

Which having been read, Mr. MCCOY, of Nevada, moved to amend by adding the following:

*Provided*, That whenever, in the opinion of the executive committee, the director-general fails to discharge his duties, or proves incompetent to the discharge of his duties, he may be superseded by said committee, and his place supplied by another.

The amendment was accepted, and the question thereupon being on the article as amended, the yeas and nays were required by Mr. Smith, of Georgia, and seconded by Mr. Batchelder, of Dakota, and were as follows:

YEA.—Alabama, Arizona, California, District of Columbia, Idaho, Illinois, Iowa, Kansas, Maryland, Missouri, Nevada, Texas, Utah, Vermont, Washington Territory—15.

NAY.—Colorado, Dakota, Georgia, Indiana, Kentucky, Louisiana, Minnesota, Nebraska, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, West Virginia, Wisconsin, and Wyoming—18.

So the article was not agreed to.

The consideration of Article VIII was then resumed; and the question being on the amendment offered by Mr. Creigh, of California,

Mr. MORRELL, of Pennsylvania, moved to substitute in place thereof the following, to wit:



## DUTIES OF THE PRESIDENT.

The president of the commission shall reside in Philadelphia, and give his time and attention to the business of the commission, and in aid of the operations of the board of finance, and for which he shall receive an annual salary, to be fixed by the executive committee. He will preside at all meetings of the commission and appoint all committees, unless otherwise ordered. He shall, at the request of the board of direction, or of any ten members of the commission, when made to him in writing, call a special meeting of the commission, giving not less than thirty days' notice to each member. He shall be *ex-officio* chairman of the executive committee and a member of all standing committees.

The yeas and nays were required by Mr. Donaldson, of Idaho, and seconded by Mr. Batchelder, of Dakota, and were as follows:

YEA.—District of Columbia, Georgia, Louisiana, Maryland, Minnesota, New Jersey, Ohio, Pennsylvania and Wyoming—9.

NAY.—Alabama, Arizona, California, Colorado, Dakota, Florida, Idaho, Indiana, Iowa, Kansas, Kentucky, Missouri, Nebraska, Nevada, North Carolina, Oregon, Rhode Island, Texas, Utah, Vermont, Washington Territory, West Virginia, and Wisconsin—23.

So the motion was not agreed to.

The question still being on the amendment offered by Mr. Creigh, of California, Mr. Creigh, by unanimous consent, withdrew his amendment.

Mr. PAUL, of Colorado, moved that the vote by which the article authorizing the election of a director-general was not agreed to, be reconsidered.

On this question the yeas and nays were required by Mr. Albertson, of North Carolina, and seconded by Mr. Smith, of Georgia, and were as follows:

YEA.—Alabama, Arizona, California, Colorado, Florida, Idaho, Indiana, Iowa, Kansas, Louisiana, Maryland, Missouri, Nebraska, Nevada, Rhode Island, Texas, Utah, Vermont, Washington Territory, West Virginia, and Wisconsin—21.

NAY.—Dakota, District of Columbia, Georgia, Kentucky, Minnesota, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, Tennessee and Wyoming—12.

So the motion was agreed to.

The question then recurring upon the article authorizing the election of a director-general, as amended,

Mr. MCCOY, of Nevada, by unanimous consent, withdrew the amendment offered by himself; and the question thereupon being upon the article,

Mr. CAMPBELL, of Indiana, moved that the article be amended by striking out the "and for which he shall receive an annual salary, to be fixed by the executive committee;" which was agreed to.

Mr. LAMBORN, of Wyoming, moved that the commission do now adjourn until to-morrow morning at 9 o'clock; which was not agreed to.

The question being on the section, as amended,

Mr. CORLISS, of Rhode Island, moved to further amend by striking out the word "shall," and inserting in place thereof the word "may;" which was not agreed to.

The question still being on agreeing to the section, as amended,

Mr. LEWIS WALN SMITH, of Georgia, moved to further amend the section by striking out the words "the executive committee shall elect," and inserting in place thereof the words "the United States Centennial Commission shall elect."

The yeas and nays were required by Mr. Adams, of Florida, and seconded by Mr. Penington, of Louisiana, and were as follows:

YEA.—Alabama, Dakota, Florida, Georgia, Kansas, Kentucky, Louisiana, Maryland, Minnesota, Nevada, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, West Virginia, Wyoming—17.

NAY.—Arizona, California, Colorado, Idaho, Illinois, Indiana, Iowa, Michigan, Missouri, Nebraska, Oregon, Rhode Island, Texas, Utah, Vermont, Washington Territory, and Wisconsin—17.

So the motion was not agreed to.

The article, as amended, was then agreed to.

Mr. BATCHELDER, of Dakota, moved that the commission do now adjourn until to-morrow morning at 10 o'clock; which was agreed to.

LEWIS WALN SMITH,  
*Temporary Secretary.*

#### F O U R T H   D A Y .

PARLOR C, CONTINENTAL HOTEL,  
*Philadelphia, Saturday, May 10, 1873.*

The commission met this day at 10 o'clock a. m., pursuant to adjournment.

The roll was called and the following members answered to their names:

Alabama.—William M. Byrd, commissioner.

Arizona.—Richard C. McCormick, commissioner.

John Wasson, alternate.

California.—John Dunbar Creigh, commissioner.

Colorado.—N. C. Meeker, alternate.

Connecticut.—Joseph R. Hawley, commissioner.

Dakota.—George A. Batchelder, commissioner.

District of Columbia.—James E. Dexter, commissioner.

Florida.—John S. Adams, commissioner.

J. T. Bernard, alternate.

Georgia.—Lewis Waln Smith, alternate.

Idaho.—Thomas Donaldson, commissioner.

Illinois.—Frederick L. Matthews, commissioner.

Indiana.—John L. Campbell, commissioner.

Iowa.—Robert Lowry, commissioner.

Kansas.—George A. Crawford, alternate.

Kentucky.—Smith M. Hobbs, alternate.

Louisiana.—John Lynch, commissioner.

Edward Penington, alternate.

Maine.—Charles P. Kimball, alternate.

Maryland.—James T. Earle, commissioner.

Michigan.—James Birney, commissioner.

Minnesota.—J. Fletcher Williams, commissioner.

Missouri.—John McNeil, commissioner.

Samuel Hays, alternate.

Nevada.—William Wirt McCoy, commissioner.

James W. Haines, alternate.

New Jersey.—John G. Stevens, alternate.

North Carolina.—Jonathan W. Albertson, alternate.

Ohio.—Alfred T. Goshorn, commissioner.

Wilson W. Griffith, alternate.

Oregon.—Andrew J. Dufur, alternate.

Pennsylvania.—Daniel J. Morrell, commissioner.

Rhode Island.—George H. Corliss, commissioner.

Samuel Powel, alternate.



Tennessee.—Thomas H. Coldwell, commissioner.

William F. Prosser, alternate.

Texas.—William Henry Parsons, commissioner.

Utah.—Oscar G. Sawyer, alternate.

Vermont.—Middleton Goldsmith, commissioner.

Virginia.—Walter W. Wood, commissioner.

Washington Territory.—Elwood Evans, commissioner.

West Virginia.—Alexander R. Boteler, commissioner.

Andrew J. Sweeney, alternate.

Wisconsin.—David Atwood, commissioner.

The minutes of yesterday's session were read and approved.

A number of communications were read and referred to the various committees.

Mr. ALBERTSON, of North Carolina, announcing the death of the Hon. James L. Orr, late commissioner from South Carolina and minister plenipotentiary to the court of St. Petersburg, offered the following preamble and resolutions:

*Whereas* the sad intelligence of the death of Hon. James L. Orr, of South Carolina, the minister of the United States to the court of St. Petersburg, and a member of the Centennial Commission having been received by us, it is

*Resolved*, That in the death of our distinguished associate this commission recognizes the loss of a valued member.

*Resolved*, That we join in the feeling of bereavement which the nation shares in common at the loss of an eminent and virtuous citizen.

*Resolved*, That we tender to the stricken family of the deceased the sympathy of this body in their great loss.

*Resolved*, That a copy of these resolutions be sent to the family of the deceased by the secretary of this body.

Which were read and unanimously adopted.

Mr. PROSSER, of Tennessee, gave a detailed statement of the progress of the centennial in Tennessee, and of the growth of the desire for its success in that State.

Mr. MORRELL, of Pennsylvania, then moved that the thanks of the commission be tendered to the commissioners from Tennessee for the interest manifested in the consummation of the great event; which was agreed to.

Mr. BYRD, of Alabama, moved to proceed to the consideration of the by-laws. Agreed to.

Mr. BYRD, of Alabama, moved that the hour of 10.30 on Monday morning be fixed as the time for the hearing of the reports from the various States; which was agreed to.

Mr. DUFUR, of Oregon, moved to reconsider the vote by which the executive committee were authorized to create the office of director-general; which was not agreed to.

The consideration of the by-laws was then resumed, and the proposed article defining the duties of the president was again taken up.

It was moved by Mr. SMITH, of Georgia, that the article be amended by inserting after the word "all" the word "special," and striking out the words "except the executive committee," so as to read as follows:

The president shall preside at all meetings of the commission, shall have all the authority and power of the presiding officer of a legislative body, shall appoint all special committees, unless otherwise ordered; shall call special meetings of the commission on his own motion or on the request of the executive committee, or at the request, in writing, of at least thirteen commissioners, of which meetings not less than thirty days' notice shall be given to each member by mail or telegraph.

Mr. COLDWELL, of Tennessee, moved that the article, as read, be adopted; which was agreed to.

Mr. LEWIS WALN SMITH, of Georgia, moved to amend by adding "He shall be ex-officio member of all committees;" which was agreed to.

Article X was then read; and the question being on its re-adoption, Mr. Donaldson, of Idaho, moved to amend by adding after the words "of the commission," the words "and perform such duties as are incidental to the office of treasurer;" which was agreed to.

Mr. LYNCH, of Louisiana, moved to strike out Article XI; which was agreed to.

Article XII was read and re-adopted.

Mr. CAMPBELL, of Indiana, moved that Article IV be amended by adding after the word "secretary" the words "and solicitor;" which was agreed to.

The article relating to standing committees was then considered and read, as follows:

There shall be appointed at each annual meeting (after the election of officers) the following-named committees, who shall serve for the ensuing year and until their successors are appointed:

1. A committee on finance and accounts.
2. A committee on plans and architecture.
3. A committee on tariffs and transportation.
4. A committee on classification.
5. A committee on foreign affairs.
6. A committee on opening ceremonies.
7. A committee on arts and sciences.
8. A committee on manufactures.
9. A committee on mining.
10. A committee on history, literature, and popular education.
11. A committee on commerce and fisheries.
12. A committee on products of the soil.
13. A committee on legislation.

Each committee shall consist of seven commissioners. Each committee shall elect its own chairman and report to the secretary.

The article, as read, was adopted.

Mr. LOWRY, of Iowa, moved to amend Article XIV by striking out the word "first" and inserting the word "third;" which was agreed to.

Article XV was read and re-adopted.

Article XVI was read and re-adopted.

Mr. BYRD, of Alabama, moved that the resolution creating the office of executive commissioner, adopted May 28, 1872, be repealed; which was agreed to.

Mr. SMITH, of Georgia, moved that the resolution relating to special meetings, adopted December 9, 1872, be repealed; which was agreed to.

Mr. EVANS, of Washington Territory, moved that the resolution adopted December 9, 1872, relative to the "limitation of time of occupying the floor," be added as a by-law; which was agreed to.

Mr. EVANS, of Washington Territory, moved that the resolution adopted December 9, 1872, relative to the "committee on nomination of secretaries of departments," be also added to the by-laws; which was agreed to.

Mr. CAMPBELL, of Indiana, moved to strike out in the article relating to director-general the word "may," and insert "shall;" which was not agreed to.

The regular business, the election of officers, now being in order, the president, Mr. Hawley, vacated the chair, and called Mr. Lowry, of Iowa, fifth vice-president, to preside.

Mr. CREIGH, of California, then moved that a recess of ten minutes be taken; which was not agreed to.



Mr. KIMBALL, of Maine, moved that the commission proceed to the election of officers; which was agreed to.

Mr. SAWYER, of Utah, moved that the election be by ballot, and that two tellers be appointed; the motion was agreed to.

Mr. DONALDSON, of Idaho, moved that the election be conducted in open session; which was agreed to.

The president appointed as tellers to conduct the election, Mr. Kimball, of Maine, and Mr. Crawford, of Kansas.

The commission then proceeded to ballot for president, and the tellers reported the Hon. Jos. R. Hawley, of Connecticut, duly elected.

Mr. SMITH, of Georgia, then moved that a committee of two be appointed to conduct the president-elect to the chair.

The CHAIR appointed Mr. Morrell, of Pennsylvania, and Mr. Goshorn, of Ohio, the committee.

Mr. MCCOY, of Nevada, then moved that the election of Mr. Hawley be declared unanimous; which was agreed to.

Mr. LOWRY, of Iowa, vacating the chair, General Hawley said:

I know you are anxious to proceed to further business. You have heard a great many speeches from me, as well as others, and I shall confine myself simply to giving expression to my very sincere and hearty thanks for this compliment. It is not my own choice. I came here this session with other theories and other ideas—theories that would have made necessary the choice of some other man for president—and expecting, indeed I had no doubt, but that those theories would be generally accepted. The commission generally seem to differ, and have made such arrangements as make it possible for me to accept the position. I will do the utmost I can; I think I can attend to the duties more faithfully than last year, during which time I was obliged to be abroad and in Congress. Although I shall have much the same duties to perform, I shall be better able to attend this year the meetings of the commission and the executive committee. I am sure I shall do the very best I can, and I am very much obliged for the compliment, not only for my own sake, but for the sake of Connecticut.

Mr. SAWYER, of Utah, moved to proceed to the election of vice-presidents; which was agreed to.

The tellers reported Mr. Goshorn, of Ohio, duly elected first vice-president.

A committee composed of Messrs. McKean, Cochran, and Steel were then introduced, and presented an invitation from the board of finance to the commission to visit the park at such time as might be convenient to the commissioners; whereupon,

Tuesday, the 13th instant, was designated as the day for the visit.

Mr. KIMBALL, of Maine, then moved that a committee of five be appointed to report the names of the five vice-presidents to be elected; which was not agreed to.

The vice-presidents declared to be duly elected were as follows:

Second vice-president, Orestes Cleveland, New Jersey.

Third vice-president, William M. Byrd, Alabama.

Fourth vice-president, John D. Creigh, California.

Fifth vice-president, David Atwood, Wisconsin.

Sixth vice-president, Thomas H. Coldwell, Tennessee.

On motion, the commission proceeded to the election of a secretary.

Mr. LEWIS WALN SMITH, of Georgia, nominated Mr. John L. Campbell, of Indiana;

Mr. BATCHELDER, of Dakota, nominated Mr. Lewis Waln Smith of Georgia;

Mr. Smith declined :

A ballot being taken resulted in the election of Mr. Campbell, of Indiana.

Mr. John L. Shoemaker, of Philadelphia, was unanimously re-elected solicitor, the teller, Mr. Kimball, of Maine, upon motion of Mr. LITTLE, of New Mexico, being instructed to cast one ballot therefor as the vote of the commission; whereupon Mr. Kimball cast a ballot for Mr. Shoemaker, who was declared unanimously elected the solicitor of the commission.

A recess was then taken until 3 o'clock.

At the hour of 3 o'clock the commission resumed its session.

Mr. MORRELL, of Pennsylvania, moved that the commission now proceed to vote for members of the executive committee by general ticket, those receiving a majority of votes on the first ballot to be declared elected, the others to be voted for subsequently; which was agreed to.

The commission then proceeded to ballot for members of the executive committee.

The tellers reported the following-named gentlemen elected on the first ballot:

Mr. Morrell, of Pennsylvania; Mr. Goshorn, of Ohio; Mr. Wood, of Virginia; Mr. Loring, of Massachusetts; Mr. Marshall, of New York; Mr. Earle, of Maryland; Mr. Corliss, of Rhode Island; Mr. Stevens, of New Jersey; Mr. Boteler, of West Virginia; Mr. McCormick, of Arizona; Mr. Parsons, of Texas.

On second ballot Mr. Lewis Waln Smith, of Georgia, was declared elected.

On fourth ballot Mr. Lynch, of Louisiana, was declared elected.

The special order of business relating to the Women's Centennial Executive Committee was then called up, and it was moved by Mr. EARLE, of Maryland, that the report be referred to the executive committee, and the thanks of the commission be tendered to the committee for its kind offices; which was agreed to.

The special order of business was now resumed; President Hawley vacated the chair; and Mr. Coldwell, of Tennessee, presided.

Mr. HAWLEY, of Connecticut, then offered the following resolution:

*Resolved*, That the Centennial Commission gratefully acknowledge the very successful exertions of the Women's Centennial Executive Committee, of Philadelphia, Mrs. E. D. Gillespie, chairman, and most cordially commend their example to the patriotic women of other States.

*Resolved*, That the commissioners and alternates be requested to authorize the formation of similar associations in their several States and Territories.

Which was read and adopted.

Mr. MORRELL, of Pennsylvania, offered the following:

*Resolved*, That the secretary of this commission be, and he is hereby, directed to notify the governor of any State or Territory when a vacancy exists in this commission, whether of commissioner or alternate commissioner, from such State or Territory, of such vacancy.

Which was adopted.

Mr. MORRELL then submitted a report and drawings received from Mr. Pettit, special agent of the commission at Vienna. Part of the report was read and referred to the executive committee.

On motion, adjourned until 10 o'clock Monday, the 12th instant.

LEWIS WALN SMITH,  
*Temporary Secretary.*



## FIFTH DAY.

PARLOR C, CONTINENTAL HOTEL,  
*Philadelphia, Monday, May 12, 1873.*

The commission met at 10 o'clock a. m., pursuant to adjournment.  
 Vice-President Atwood, of Wisconsin, in the chair.

The roll was called and the following members answered to their names:

Alabama.—William M. Byrd, commissioner.

Arizona.—John Wasson, alternate.

California.—John Dunbar Creigh, commissioner.

Colorado.—J. Marshall Paul, commissioner; N. C. Meeker, alternate.

Dakota.—Geo. A. Batchelder, commissioner.

Delaware.—John H. Rodney, commissioner.

District of Columbia.—James E. Dexter, commissioner.

Florida.—John S. Adams, commissioner; J. T. Bernard, alternate.

Georgia.—Lewis Waln Smith, alternate.

Indiana.—John L. Campbell, commissioner; David M. Boyd, jr., alternate.

Iowa.—Robert Lowry, commissioner.

Kansas.—George A. Crawford, alternate.

Louisiana.—Edward Penington, alternate.

Michigan.—James Birney, commissioner.

Minnesota.—J. Fletcher Williams, commissioner.

Mississippi.—O. C. French, commissioner.

Missouri.—John McNeil, commissioner.

Nevada.—William Wirt McCoy, commissioner; James W. Haines, alternate.

New Jersey.—Orestes Cleveland, commissioner; John G. Stevens, alternate.

New Mexico.—Eldridge W. Little, commissioner.

New York.—Charles H. Marshall, alternate.

North Carolina.—Jonathan W. Albertson, alternate.

Ohio.—Wilson W. Griffith, alternate.

Oregon.—Andrew J. Dufur, alternate.

Pennsylvania.—Daniel J. Morrell, commissioner.

Rhode Island.—George H. Corliss, commissioner; Samuel Powell, alternate.

Tennessee.—Thomas H. Coldwell, commissioner; William F. Prosser, alternate.

Texas.—William Henry Parsons, commissioner.

Virginia.—Walter W. Wood, commissioner.

Washington Territory.—Elwood Evans, commissioner.

West Virginia.—Alexander R. Boteler, commissioner.

Wisconsin.—David Atwood, commissioner.

The minutes of the last meeting were read and approved.

A communication from the secretary of state of New Hampshire was read and referred to the executive committee.

Also, communications from Messrs. McDonald and Gantt, of Arkansas, regretting their inability to be present at this session.

Mr. ADAMS presented a communication from the Women's Association, which, having been read, on motion of Mr. COLDWELL, of Tennessee, was referred to the executive committee.

Mr. L. A. GOBRIGHT, District of Columbia, offered the following resolution:

*Resolved*, That each of the commissioners and alternate commissioners be requested to furnish to the secretary of the United States Centennial Commission his full name, place and date of birth, and length of residence in the State, District, or Territory represented by him at the time of his appointment; also, his business or profession; which information shall be entered upon the records of this commission, in a separate book kept for the purpose.

*Resolved*, That the secretary is hereby directed to obtain and preserve similar information in relation to deceased commissioners.

Which was read and adopted.

Mr. GOLDSMITH, of Vermont, offered the following:

*Resolved*, That the committee on classification be, and is hereby, directed to give, in the system of classification, that specific and separated prominence to the great industrial interests of the country which is proportionate to the extent and practical value of each.

Which was read and adopted.

Mr. MORRELL, of Pennsylvania, moved that the resolution offered by Mr. Holton, of Wisconsin, and adopted at the session held in December, 1872, (page 193, Journal,) be recommitted to the executive committee for future action.

Mr. SAWYER, of Utah, moved to amend by referring it to the committee on history and literature; which was agreed to.

Mr. CAMPBELL, of Indiana, made an explanatory statement before assuming the duties of secretary of the commission, and moved that Mr. Lewis Waln Smith, the temporary secretary, be continued in the control of the office until he could make arrangements to leave his home in Indiana; which was agreed to.

Mr. WOOD, of Virginia, moved that the special order of business, "The reports of the various States," be indefinitely postponed; which was agreed to.

Mr. BYRD, of Alabama, moved that the resolution relative to the office of executive commissioner adopted at the session held in May, 1872, (page 146, Journal,) be repealed; which was agreed to.

Mr. DUFUR, of Oregon, offered the following:

*Resolved*, That the committee on tariffs and transportation be instructed to make arrangements with railway and steamship companies and other companies in regard to running trains and making trips at reasonable rates from different parts of the States and Territories of the United States to Philadelphia during the exhibition, especially for the transporting of all the people of the United States who desire to attend the exhibition, and for their return to their respective homes; to furnish them with full information through the agency of competent persons appointed for that purpose, that when visitors arrive they will know where proper apartments for lodging and boarding can be obtained; to make arrangements for the travel of visitors to the exhibition, so that at their starting they can procure certificates allowing them full advantages offered by the commission; and for these purposes may appoint an agency in each county and city in the several States and Territories to give such information, and may make rules to govern each visitor while traveling to and from the exhibition.

Which was adopted.

Mr. CRAWFORD, of Kansas, offered the following:

*Resolved*, That the thanks of this commission are hereby tendered to



Professor W. P. Blake, for his faithful services as executive commissioner.

Which was adopted.

Mr. SAWYER, of Utah, then moved that the commission proceed to the special order of business, the adoption of the by-laws as amended; which was agreed to.

Mr. CREIGH, of California, moved that the by-laws be taken up in order; which was agreed to.

ARTICLE I. *Official title.*—This body shall be known as “The United States Centennial Commission,” as provided for by the act of Congress approved March 3, 1871, and the celebration for the conduct of which the commission is appointed shall be known as “The International Exhibition of 1876.”

Read and adopted.

ARTICLE II. *Quorum.*—A quorum for the transaction of business shall consist of the commissioners representing not less than a majority of the States and Territories.

Read and adopted.

ARTICLE III. *Power of Alternate Commissioner.*—An alternate commissioner shall have all the powers of a commissioner when the commissioner is not present at any meeting. When the commissioner is present, the alternate shall have all the powers of a commissioner, but shall have no vote.

Read and adopted.

ARTICLE IV. *Officers of the Commission.*—The officers of the commission shall consist of a president, six vice-presidents, a secretary, and solicitor. Elections shall be by ballot, and shall be held during the annual session of the commission in May, on such day of the session as the commission shall, during its session, designate; notice of which shall be given in open session, at least one day preceding the holding the election. In case of a failure to elect at the time specified, the officers then serving shall continue until the choice of their successors.

Read and adopted.

ARTICLE V. *Executive Committee.*—An executive committee, to consist of thirteen members, shall be elected at the regular annual meeting of the commission, who shall hold their offices one year, and until their successors are elected.

When duly convened, five members shall constitute a quorum for business. It shall elect its own chairman, appoint its own clerk, and such agents and employés as it shall deem necessary, and define their duties.

The committee shall cause to be kept a journal of all its proceedings, transactions, and votes; shall have power to make such rules and regulations for its own government as it may deem proper; shall act without delay on all matters referred to it by the commission, and make report thereon to the commission when in open session.

During the sessions of the commission the committee shall have all the powers usually exercised by the executive committees of corporate bodies, and in the recess of the commission shall have all the powers and authority of this commission. In case of a vacancy in the committee during the recess of the commission, the same shall be filled by the president until action shall be taken thereon by the commission.

The rulings of the commission on any subject connected with the exhibition shall be followed and carried out by the executive committee.



The papers, books, and journal of its proceedings shall at all times be subject to examination by the commission or by any member thereof.

The standing and other committees shall report to the executive committee, when so requested, (provided that it is not during the session of the commission,) the progress of the work of such committee.

The chairman of the executive committee is authorized to refer to any committee such matters as may come before it, and which should appropriately have been, or ought to be, referred to a committee, during the recess of the commission.

The executive committee shall, at the beginning of each session of the commission, make full report of the proceedings of the committee.

Read and adopted.

ARTICLE VI. *Director-General*.—For the more efficient conduct and management of the business of the commission, the executive committee shall elect one of its own members as its chairman, who shall be known and recognized as Director-General; he shall reside in Philadelphia, and give his entire time and attention to the business of the commission, and in aid of the operations of the Centennial Board of Finance; which was read, and Mr. CORLISS, of Rhode Island, offered the following as a substitute:

The executive committee shall have authority to elect one of its own members, who shall be known and recognized as Director-General, whose office shall be at the headquarters of the commission in Philadelphia, and whose duties, powers, and compensation shall be fixed by the said committee.

Mr. CRAWFORD, of Kansas, moved to amend by adding the words "who shall reside" in Philadelphia; which was not agreed to.

The question recurring on the substitute offered by Mr. Corliss, the yeas and nays were required by Mr. Dufur, of Oregon, and seconded by Mr. Byrd, of Alabama, and were as follows:

YEA.—Alabama, Arizona, Colorado, Delaware, District of Columbia, Florida, Georgia, Indiana, Kansas, Louisiana, Michigan, Mississippi, Nevada, New Jersey, New Mexico, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Texas, Vermont, Washington Territory, West Virginia, Wisconsin—25.

NAY.—California, Dakota, Idaho, Oregon, Utah—5.

The question being taken on adopting the substitute offered by Mr. Corliss as Article VI of the by-laws, it was agreed to.

ARTICLE VII. *Duties of the President*.—The president shall preside at all meetings of the commission; shall have all the authority and power of the presiding officer of a legislative body; shall appoint all committees, unless otherwise ordered; shall call special meetings of the commission on his own motion, or on the request of the executive committee, or on the request in writing of at least thirteen commissioners, of which meetings not less than thirty days' notice shall be given to each member, by mail or telegraph; he shall be *ex-officio* member of all committees.

Read and adopted.

ARTICLE VIII. *Duties of the Vice-Presidents*.—A vice president shall, in the absence of the president, perform his duties, each taking precedence in accordance with the order of his election.

Read and adopted.



ARTICLE IX. *Duties of Secretary.*—The secretary shall conduct all correspondence of the commission, and perform such duties as are incidental to the office of treasurer; he shall receive and carefully file all documents relative to the business of the commission; he shall be present at the office of the commission, in the city of Philadelphia, and carry out any orders of the commission or the executive committee; he shall keep minutes of all transactions, and at each meeting, or when required, report all matters of interest to the commission and the executive committee. All books, documents, and papers in his possession shall, at all times, be open to the inspection of any member.

Read and adopted.

ARTICLE X. *Payment of Moneys.*—No money shall be drawn from the treasury of the commission except on specific appropriations made by the commission or the executive committee, and under such rules and restrictions as the executive committee shall prescribe;

Was read;

Mr. CREIGH, of California, moved that Article X be stricken out; which was not agreed to.

Mr. BYRD, of Alabama, moved to strike out the word “and” after the word “committee;” which was agreed to.

Article X, as amended, was adopted.

ARTICLE XI. *Standing Committees.*—There shall be appointed at each annual meeting, after the election of officers, the following-named committees, who shall serve for the ensuing year, and until their successors are appointed:

1. A committee on finance and accounts.
2. A committee on plans and architecture.
3. A committee on tariffs and transportation.
4. A committee on classification.
5. A committee on foreign affairs.
6. A committee on opening ceremonies.
7. A committee on arts and sciences.
8. A committee on manufactures.
9. A committee on mining.
10. A committee on history, literature, and popular education.
11. A committee on commerce.
12. A committee on products of the soil.
13. A committee on legislation.

Each committee shall consist of seven members, and shall elect its own chairman, of which notice shall be given to the secretary.

Which having been read,

Mr. EVANS, of Washington Territory, moved to strike out the words “for the ensuing year, and;” which was agreed to.

The article, as amended, was then adopted.

ARTICLE XII. *Stated Meetings.*—The stated annual meeting of the commission shall be held on the third Wednesday of May, of each year, after 1873.

Read and adopted.

ARTICLE XIII. *Amendments to By-laws.*—Amendments to the by-laws shall only be made at a meeting of the commission, as provided for in the fifth section of the act of Congress.

Read and adopted.

ARTICLE XIV. *Committee on Nomination of Secretaries of Divisions.*—Suitable persons shall be selected from time to time, as the necessities of the exhibition shall require, to act as secretaries of the various divis-

ions of the exhibition, according to the classification; and a standing committee of five, to be selected by the Chair, shall be constituted, by which such secretaries shall be nominated, subject to confirmation by the executive committee.

Mr. EVANS, of Washington Territory, moved that the resolution adopted December 9, 1872, be added as a by-law.

Mr. CREIGH, of California, moved to amend, that the resolution be made an article by itself; which was agreed to.

ARTICLE XIV, as read, was then adopted.

Mr. MORRELL, of Pennsylvania, moved to amend the name of the eleventh committee so as to read "commerce and navigation." Which was agreed to.

Mr. MORRELL, of Pennsylvania, moved that a committee on fisheries and fish-culture be appointed; which was agreed to.

ARTICLE XV. *Limitation of time for occupying the floor.*—At the meetings of the commission no member shall occupy the floor longer than ten minutes, unless by unanimous consent.

Mr. CREIGH, of California, moved that the resolution relative to "limitation of time," be made an article of the by-laws; which was agreed to.

ARTICLE XV was read and adopted.

Mr. COLDWELL, of Tennessee, moved that the by-laws, as a whole, be adopted; which was unanimously agreed to.

Mr. BYRD, of Alabama, offered the following resolution:

*Resolved*, That an international congress be opened on the first Monday in June, 1876, in the city of Philadelphia, to be constituted of two members of each nation represented at the Centennial Exhibition, the members to be appointed by each government in such mode as each may deem proper; the congress to be organized by the members thereof, and its proceedings shall be conducted under rules adopted by it after its organization. The congress shall have authority to consider all questions of international and maritime law, and to whom all matters of premiums offered for treatises on such subjects shall be referred and by it decided, which shall be final. That the committee on foreign affairs communicate this resolution to all foreign governments, and to the President of the United States.

Which was read and referred to the committee on foreign affairs.

Mr. ADAMS, of Florida, offered the following resolution:

*Resolved*, That the Centennial Commission hereby express to the Centennial Board of Finance, and to the board of supervisors of the centennial fund of the State of Pennsylvania, the profound gratification of the commission at the promptness and alacrity with which their respective organizations have been completed; their full appreciation of the warm cordiality with which the full co-operation of the respective boards has been tendered; and the active confidence felt by the commission, that by the joint efforts and harmonious action of the commission and assisting associations, the International Exposition cannot fail to be attended with decided success.

Which was read and adopted.

Mr. PROSSER, of Tennessee, offered the following resolution:

*Resolved*, That the executive committee be requested to take such active measures as may be necessary to secure a thorough representation of the industry, products, and civilization of Japan, China, and other oriental nations.

Which was read and adopted.



Mr. GOLDSMITH, of Vermont, offered the following :

*Resolved*, That the committee on foreign affairs tender to the American Medical Association such co-operation as may be necessary, in reference to any international congress to entertain questions pertaining to medical matters, which they may have inaugurated or may hereafter inaugurate.

Which was read and referred to the committee on foreign affairs.

The following communication was then read :

MAY 12, 1873.

*To the President and Members of the United States Centennial Commission :*

GENTLEMEN: I feel greatly honored by your renewed expression of confidence in re-electing me your solicitor, and desire to thank you.

Whatever service I may be able to render in aid of the great work you have in charge shall be done to the very best of my ability.

Very respectfully,

JNO. L. SHOEMAKER.

A report from Mr. Wm. P. Blake, giving detailed information of the Vienna Exposition, was also read and referred to the executive committee.

A recess until 3 o'clock was then agreed to. .

The hour of 3 o'clock having arrived, the commission re-assembled, Mr. Hawley presiding.

The president announced the appointment of the following committees.

#### LIST OF COMMITTEES NAMED BY THE PRESIDENT, MAY 12.

1. *Plans and architecture*.—Messrs. Goshorn, of Ohio; Parsons, of Texas; Cleveland, of New Jersey; Packer, of Pennsylvania; Straw, of New Hampshire; Dexter, of the District of Columbia; Lamborn, of Wyoming.

2. *Tariff and transportation*.—Messrs. French, of Mississippi; Boyd, of Indiana; Earle, of Maryland; Nye, of Maine; Prosser, of Tennessee; Wickizer, of Utah; Cate, of New Hampshire.

3. *Finance*.—Messrs. Packer, of Pennsylvania; Birney, of Michigan; Davis, of Maryland; Byrd, of Alabama; Adams, of Florida; Matthews, of Illinois; Paul, of Colorado.

4. *Foreign affairs*.—Messrs. Campbell, of Indiana; Stevens, of New Jersey; Smith, of Georgia; Kimball, of Maine; Lamborn, of Wyoming; Sweeney, of West Virginia; McCormick, of Arizona.

5. *Opening services*.—Messrs. Powel, of Rhode Island; McNeil, of Missouri; Clarkson, of Iowa; Matthews, of Illinois; Latham, of Wyoming; Moody, of Nebraska; Batchelder, of Dakota.

6. *Legislation*.—Messrs. McCormick, of Arizona; Atwood, of Wisconsin; Prosser, of Tennessee; Boteler, of West Virginia; Donaldson, of Idaho; Gantt, of Arkansas.

7. *Classification*.—Messrs. Blake, of Connecticut; Hays, of Missouri; Albertson, of North Carolina; Martin, of Kansas; Rodney, of Delaware; Holton, of Wisconsin; Penington, of Louisiana.

8. *Nomination of secretaries*.—Messrs. Albertson, of North Carolina; Goldsmith, of Vermont; Creigh, of California; Davis, of Maryland; Corliss, of Rhode Island.

9. *Arts and sciences*.—Messrs. Loring, of Massachusetts; Birney, of Michigan; Goldsmith, of Vermont; Hobbs, of Kentucky; Sawyer, of Utah; Bernard, of Florida; Gobright, of the District of Columbia.



10. *Manufactures*.—Messrs. Morrell, of Pennsylvania; Straw, of New Hampshire; Spooner, of Massachusetts; Griffith, of Ohio; Davis, of Maryland; Crawford, of Kansas; Haines, of Nevada.

11. *History, literature, and popular education*.—Messrs. Boteler, of West Virginia; Pruyn, of New York; Lynch, of Louisiana; Atwood, of Wisconsin; Williams, of Minnesota; Evans, of Washington Territory; Coldwell, of Tennessee.

12. *Commerce*.—Messrs. Marshall, of New York; Kimball, of Maine; Wood, of Virginia; Grant, of Michigan; Cooper, of Alabama; Dufur, of Oregon; McNeil, of Missouri.

13. *Agriculture and live-stock*.—Messrs. Lowry, of Iowa; Dufur, of Oregon; Meeker, of Colorado; Mallory, of Kentucky; Little, of New Mexico; Weldon, of Illinois; Cameron, of South Carolina.

14. *Mines and Mining*.—Messrs. McCoy, of Nevada; Donaldson, of Idaho; Creigh, of California; Wasson, of Arizona; Paul, of Colorado; Hays, of Missouri; Clagett, of Montana.

Mr. CLEVELAND, of New Jersey, desired to be excused from serving on the committee on plans and architecture; which was not agreed to.

Mr. BYRD, of Alabama, moved that when the commission adjourn, it adjourns until 9 o'clock to-morrow; which was agreed to.

Mr. MARSHALL, of New York, desired to be excused from serving on the committee on foreign affairs; which was agreed to.

Mr. SAWYER, of Utah, offered the following resolution:

*Resolved*, That the committee on arts and sciences be authorized to enlist the co-operation of the National Academy of Design in preparing the plans for the gallery of art, and in carrying out to a successful issue the objects of this department of the exhibition.

Which was read and adopted.

Mr. CAMPBELL, of Indiana, offered the following resolution:

*Resolved*, That the thanks of this commission are hereby tendered to the Hon. Lewis Waln Smith for the invaluable services gratuitously performed by him, as temporary secretary since the organization, March 4, 1872, to the present time. The ability and zeal he has manifested command our highest commendation, and we desire to place upon record our cordial indorsement of his acts as secretary of the commission.

Which was read and unanimously adopted.

Mr. MCNEIL, of Missouri, offered the following:

*Resolved*, That the thanks of this commission are cordially tendered to Col. Bailey Peyton, and to the Hon. Henry S. Foote, for their speeches before the legislatures of the States of Kentucky and Tennessee in behalf of the objects of this commission.

Which was adopted.

Mr. EVANS, of Washington Territory, offered the following:

*Resolved*, That the liberal contributions of Pennsylvania, Tennessee, and Oregon are accepted by this commission as the guarantee of the success of the International Exposition of 1876. That the example set by the States above named is worthy of our imitation, and should stimulate each commissioner of each State and Territory to renewed effort to secure appropriate legislative recognition and assistance, and the full subscription allotted to each State and Territory.

Which was read and adopted.

Mr. STEVENS, of New Jersey, offered the following resolutions:

*Resolved*, That we congratulate the country upon the appointment to the board of finance of men widely known for their spotless integrity and great administrative ability and experience.

*Resolved*, That with a view to economize time as far as possible, the



executive committee is hereby instructed to have issued a circular, notifying those proposing to exhibit that they should prepare at an early day an estimate of their requirements of space, so that when called for by further notice these estimates can be promptly furnished.

Which were read and adopted.

Mr. COLDWELL, of Tennessee, moved that a special committee on horticulture be appointed; which was agreed to.

Mr. WILLIAMS, of Minnesota, offered the following resolution:

*Resolved*, That the commissioners from the respective States and Territories communicate with the board of finance on the subject of future subscriptions to the stock of the Centennial Anniversary, and suggest such measures to said board as, in their judgment, will best promote the success of the Centennial Anniversary.

Which was read and adopted.

Mr. MCCOY, of Nevada, offered the following:

*Resolved*, That the time for the return of the books for subscriptions to the centennial fund be extended to the next meeting of the centennial commissioners.

Which was not agreed to.

Mr. BYRD, of Alabama, then moved that the commission adjourn until 9 o'clock to-morrow; which was agreed to, and the commission adjourned.

---

#### SIXTH DAY.

PARLOR C, CONTINENTAL HOTEL,  
*Philadelphia, Tuesday, May 13, 1873.*

The commission met this morning at 9 o'clock, pursuant to adjournment, President HAWLEY, of Connecticut, in the chair.

The roll was called, and the following members answered to their names:

Alabama.—William M. Byrd, commissioner.

Arizona.—Richard C. McCormick, commissioner.

John Wasson, alternate.

California.—John Dunbar Creigh, commissioner.

Colorado.—J. Marshall Paul, commissioner.

N. C. Meeker, alternate.

Connecticut.—Joseph R. Hawley, commissioner.

District of Columbia.—James E. Dexter, commissioner.

Florida.—John S. Adams, commissioner.

J. T. Bernard, alternate.

Idaho.—Thomas Donaldson, commissioner.

Indiana.—John L. Campbell, commissioner.

Iowa.—Robert Lowry, commissioner.

Kansas.—George A. Crawford, alternate.

Louisiana.—John Lynch, commissioner.

Edward Penington, alternate.

Michigan.—James Birney, commissioner.

Minnesota.—J. Fletcher Williams, commissioner.

Mississippi.—O. C. French, commissioner.

Missouri.—John McNeil, commissioner.

Samuel Hays, alternate.

Nevada.—William Wirt McCoy, commissioner.

James W. Haines, alternate.

New Mexico.—Eldridge W. Little, commissioner.

New York.—Charles H. Marshall, alternate.

New York.—Charles H. Marshall, alternate.

Ohio.—Alfred T. Goshorn, commissioner.

Wilson W. Griffith, alternate.

Oregon.—Andrew J. Dufur, alternate.

Pennsylvania.—Daniel J. Morrell, commissioner.

Rhode Island.—Samuel Powel, alternate.

Tennessee.—Thomas H. Coldwell, commissioner.

William F. Prosser, alternate.

Texas.—William Henry Parsons, commissioner.

Utah.—Oscar G. Sawyer, alternate.

Vermont.—Middleton Goldsmith, commissioner.

Virginia.—Walter W. Wood, commissioner.

Washington Territory.—Elwood Evans, commissioner.

West Virginia.—Alexander R. Boteler, commissioner.

Wisconsin.—David Atwood, commissioner.

Mr. LITTLE, of New Mexico, moved that the reading of yesterday's minutes be dispensed with; which was agreed to.

Mr. McCORMICK, of Arizona, moved that the committee on horticulture, created yesterday, be made a permanent committee, under the title of the committee on horticulture and floriculture, and have a membership of seven.

In the absence of a quorum no action was taken on the motion, and the secretary was instructed to call the roll of committees, in order to ascertain the officers elected by each committee. The following were announced:

*Tariffs and transportation.*—O. C. French, of Mississippi, chairman; D. M. Boyd, jr., of Indiana, secretary.

*Finance.*—Asa Packer, of Pennsylvania, chairman; J. M. Paul, of Colorado, secretary.

*Opening services.*—F. L. Matthews, of Illinois, chairman.

*Legislation.*—R. C. McCormick, of Arizona, chairman.

*Manufactures.*—E. A. Straw, of New Hampshire, chairman; George A. Crawford, of Kansas, secretary.

*Education.*—D. Atwood, of Wisconsin, chairman; J. F. Williams, of Minnesota, secretary.

*Products of the soil.*—Robert Lowry, of Iowa, chairman.

The roll by States was again called, and a quorum responding, the question recurred on the motion of Mr. McCormick, of Arizona; and being again read, the motion was agreed to.

Mr. McCORMICK, of Arizona, moved that the title of the permanent committee on products of the soil be changed to that of the committee on agriculture and live-stock.

Mr. POWEL, of Rhode Island, moved to amend by inserting the term domestic animals instead of live-stock; which was not agreed to.

The motion of Mr. McCormick was then agreed to.

Mr. ADAMS, of Florida, offered the following:

*Resolved*, That the executive committee is hereby requested to prepare and issue, in cheap form, the two addresses to the people of the United States heretofore adopted by the commission, with such other additional matter as, in their opinion, will further commend the centennial celebration to the sympathy and patriotic interest of the people in every State and Territory; and that such publication be distributed *pro rata*, and forward to the commissioners of each State for distribution.

Which was read and adopted.

President HAWLEY announced the following additional committees:

*Committee on horticulture and floriculture.*—Mr. Coldwell, of Tennes-



see; Mr. Haines, of Nevada; Mr. Penington, of Louisiana; Mr. Gantt, of Arkansas; Mr. Kimball, of Maine; Mr. Furnas, of Nebraska; Mr. Bernard, of Florida.

*Committee on fisheries and fish-culture.*—Mr. Goldsmith, of Vermont; Mr. Evans, of Washington Territory; Mr. Wickizer, of Utah; Mr. Holton, of Wisconsin; Mr. Dexter, of the District of Columbia; Mr. Adams, of Florida; Mr. Parsons, of Texas.

To fill vacancies, Mr. L. A. Gobright, of the District of Columbia, was placed on the committee on legislation; and Mr. McCormick, of Arizona, was placed on the committee of foreign affairs.

Mr. MORRELL, of Pennsylvania, chairman of the executive committee, reported that the executive committee had elected Mr. Alfred T. Goshorn, of Ohio, to the office of director-general, and Mr. B. H. Haines secretary of the executive committee.

Mr. BYRD, of Alabama, moved to unanimously indorse the selection made for director-general by the executive committee; which was agreed to.

Mr. DONALDSON, of Idaho, moved that the commission take a recess until 3 o'clock this afternoon; which was agreed to.

#### AFTERNOON SESSION.

MAY 13.

The commission re-assembled at 4 o'clock, Vice-President J. D. CREIGH, of California, in the chair.

Mr. WASSON, of Arizona, moved that the thanks of the commission be tendered to the representatives of the press for their courtesy during the session of the commission; which was agreed to.

The name of Mr. Sawyer, of Utah, was substituted on the committee on mines and mining, in place of Mr. Creigh, of California.

Mr. LEWIS WALN SMITH, of Georgia, presented a communication from the board of finance, regarding the relative rights and duties of the board and the commission; which was read and referred to the proper committee.

Mr. FRENCH, of Mississippi, then offered the following resolution:

*Resolved*, That a committee of five be appointed to attend the convention of governors which meets in Atlanta, Georgia, on the 25th instant, for the purpose of presenting to the same the objects of the commission, with a view to obtaining the co-operation of the same.

Which was read and adopted.

The CHAIR appointed Mr. French, of Mississippi, Mr. Byrd, of Alabama, Mr. Coldwell, of Tennessee, Mr. McNeil, of Missouri, Mr. Gantt, of Arkansas, as the committee.

The committee on commerce reported that they had organized, and selected Col. W. W. Wood, of Virginia, for president, and Mr. C. H. Marshall, of New York, as secretary.

The motion to adjourn was then agreed to.

LEWIS WALN SMITH,  
Temporary Secretary.

[Inclosure 1 in Appendix B.]

## APPENDIX No. 1.

## REPORT OF THE EXECUTIVE COMMITTEE TO THE UNITED STATES CENTENNIAL COMMISSION.

*To the honorable the United States Centennial Commission :*

At the close of the sessions of the commission in December last, the work of organizing the Centennial Board of Finance had made very little progress, and the executive committee again found itself charged with conducting to a successful issue this all-important matter.

The express words of the act of Congress—that “the United States shall not be liable for any expenses attending such exhibition”—compelled us to look to other sources for the requisite funds to conduct the celebration. The prospects were very discouraging. Gentlemen of large experience regarded our success as problematical, some even declaring that it was impossible.

Your committee, however, determined to appeal to the people for the means to carry on the great undertaking, and proceeded to organize committees of citizens of Philadelphia, for the purpose of obtaining subscriptions to the stock of the Centennial Board of Finance. Committees were formed of every trade, occupation, profession, and interest, and the issue of their labors has been most gratifying. All the committees were under the general supervision of the Citizens' Centennial Finance Committee of Philadelphia. A report and brief account of their formation has been received and placed among the records of the commission as an official recognition of their valuable services.

Your committee have had conferences with the park commission, the joint committee of the councils of Philadelphia, and the executive committee of the Citizens' Centennial Finance Committee of Philadelphia, and with the Pennsylvania State centennial commission.

Your committee early conceived it of the first importance that the municipality of Philadelphia should step forward, and by a liberal donation assist in giving the enterprise a solid recognition. We presented these views to the joint committee of the city councils, and in a very short time thereafter the city most gracefully responded to our suggestions, and appropriated a half million of dollars toward the centennial buildings.

## THE GRAND MASS-MEETING.

Your committee, impressed with the importance of holding a mass-convention in the city of Philadelphia, made arrangements for an imposing public meeting, to be held on the 22d day of February last. The meeting was in every respect a success. Prominent speakers from different parts of the country were present, and participated in the proceedings; the newspapers published full reports, and the announcement of the grand total of the subscriptions made up to that time was received with the most unbounded favor and applause.

The meeting produced beneficial effects throughout the whole nation. A brief and succinct account has been given of this meeting, which has been placed on file in the office of the commission, and is well worth historical preservation.

Your committee visited Harrisburg, and impressed upon the governor and legislature of Pennsylvania the necessity of giving the cause financial aid, suggesting the sum of one million dollars as the proper amount for the purpose.

Your committee had the honor of meeting the senate and house of representatives in joint session, in the hall of the house of representatives, on the evening of January 28, 1873, and, assisted by the Hon. E. K. Price, of the park commission, and other gentlemen, submitted for the consideration of those bodies the advantages to be conferred by the exhibition upon the State and the nation at large. A bill was immediately introduced into the house of representatives by the Hon. John I. Mitchell, chairman of the committee of ways and means of that body, making an appropriation of one million dollars toward the erection of the centennial buildings; and, after undergoing amendment, it was finally passed by the legislature, and was immediately approved by the governor.

The thanks of the commission are due to His Excellency John F. Hartranft, the governor of the State of Pennsylvania, for the constant and earnest support and encouragement given by him in this essential matter.

In his inaugural address, delivered but a few months ago, his stirring words in favor of the centennial celebration are worthy of the warmest commendation.

His immediate predecessor in office, John W. Geary, now deceased, in his last annual message, and almost in the last words of his life, expressed his great interest in this celebration, and recommended it to the earnest support of the American people.



## CO-OPERATION OF OTHER STATES.

Your committee have also taken measures calling the attention of the legislatures of the different States to the subject of the centennial, and inviting their co-operation.

The legislatures of Tennessee, North Carolina, Virginia, and Kentucky have passed resolutions commending the celebration, and promising their hearty co-operation. Copies of which are hereto annexed, (marked Exhibit A.)

The grateful acknowledgments of this commission are due to these States for their patriotic action in this respect.

## THE PUBLIC PRESS.

Pursuant to the direction of the commission, your committee invited a conference with the editors and proprietors of the newspapers of Philadelphia and vicinity. All the leading newspapers were represented at the conference, and the gentlemen who were present, with great unanimity, expressed their interest in the enterprise, and promised their warmest support.

Your committee desire to place upon record their acknowledgment of the courtesies generally received from the newspaper press, and of the great services they have rendered.

The committee have made an amendment to the rules for the organization of the board of finance, which was deemed necessary for the purpose of giving notice that the time of payment of the further installments upon the stock would be specified by the board of finance, when organized. These amendments are hereto appended, (marked Exhibit B.)

Since the meeting of the commission, circular addresses have been printed by direction of the executive committee, and distributed in large numbers throughout the country, as follows:

An address to the people of the United States, [Form 29.]

An address to the clergy and religious associations of the United States, [Form 32.]

An address to the officers and teachers in the universities, colleges, and schools of the United States, [Form 33.]

An address to the officers of the General Government, and of the government of the several States, [Form 39.]

An address to the scientific, industrial, and commercial organizations in the United States, [Form 34,] copies of which are hereto severally appended, [marked Exhibit C.]

Also, a circular address to the authorized agents of the commission, requesting the active co-operation of all, [Form 30.]

Also, a circular inviting designs for an engraving on steel of a form of certificate of stock of the Centennial Board of Finance [Form 38] was issued and distributed, a copy of which is hereto appended, [marked Exhibit D.]

The committee also, through their chairman, transmitted to the governor of Pennsylvania a letter relative to the duty of the State of Pennsylvania to aid in securing the success of the centennial celebration by making a sufficient appropriation for that purpose. A copy of this letter is appended, [marked Exhibit E.] This letter was largely circulated throughout the State, and contributed toward the enlightenment of the people and popularizing the proposed appropriation by the Commonwealth.

Since the last meeting of the commission, the executive committee have been strongly impressed with the importance of having early and thorough knowledge concerning the organization of the Vienna Exposition, and of obtaining, if possible, full working plans of the buildings, grounds, &c. As the classification of objects to be exhibited must to a certain extent govern the arrangements of the buildings, &c., the committee concluded, after full consultation, to send abroad at once the executive commissioner, Professor Blake, who has been principally charged with the work of classification, with instructions, a copy of which is on file in the office of the commission.

Under the report of the special committee, appointed to consider what officers are necessary for the commission, which was read and approved December 10, 1872, the office of the executive commissioner was continued at the discretion of the executive committee to the present session of the commission; the executive committee were authorized to define his duties and assume direction of his labors.

The action of the executive committee in sending him abroad is deemed to be within their powers, and the best employment which could be found for his official talents and culture. His salary, which has been approved by the commission, was not changed, but it was deemed right to make him an allowance for expenses which would not have been incurred in the discharge of his ordinary duties.

Before going abroad, Mr. Blake had prepared a partial report of his labors, which has been completed by Mr. Pratt, and contains many valuable suggestions and recommendations.

In also sending abroad as a special agent a distinguished engineer, Henry Pettit, sq., who consented to give his services gratuitously, with an allowance of actual ex-



peuses only, the executive committee feel that they have exercised a wise discretion in a matter requiring instant action.

By resolution adopted December 10, 1872, it was declared to be the especial duty of the executive committee, during the recess of the commission, to use all their efforts to inform the people of the intention and purposes of this commission, and to call upon them for their faithful co-operation. In discharging this duty, the committee has been obliged to create and employ numerous agencies and to incur considerable expense. This is fully justified by the general and increasing interest taken on the subject in many States of the Union, by the action of the city of Philadelphia and the State of Pennsylvania, in making large appropriations in aid of the exhibition, and in the large aggregate of subscriptions to the stock of the Centennial Board of Finance. In pursuing this work the committee has been led to the recognition of an agency which it is thought will be permanent in its character and greatly influential in promoting the success of the work. The citizens' centennial executive committee of Philadelphia, which rendered most important and effective service in procuring subscriptions, and in other ways, preliminary to the organization of the board of finance, conceived the happy idea of enlisting patriotic women in the cause, and appointed an executive committee for Pennsylvania, consisting of thirteen women, residents of Philadelphia, who proceeded to effect a general and thorough organization.

Recognizing at once the great value of this organization, the executive committee gave it official recognition on February 24, 1873, and the Women's Centennial Committee of Pennsylvania, of which Mrs. E. D. Gillespie, of this city, is president, is now actively engaged in the work and demonstrating its usefulness.

It is hoped that similar organizations will be effected in the other States and Territories, and the subject is commended to the several commissioners with the view of securing the active cooperation of the women of their respective States and Territories.

In accordance with the authority conferred upon us by resolution of the commission of December 5, 1872, one hundred stockholders of the Centennial Board of Finance were nominated, from whom a board of directors were chosen by the members of that corporation, at a meeting of the corporators and subscribers to the stock held in Philadelphia the 22d day of April, 1873, pursuant to the call of said meeting, published as required by the act of Congress. A copy of the proceedings of the meeting, including said call, and a list of the gentlemen elected directors of said corporation, are hereto appended, [marked Exhibit F.]

With this we enter upon a new and most promising stage of the enterprise, involving, to a certain extent, new relations, and a change of duties and responsibilities.

The organization of the Centennial Board of Finance puts the national exposition upon a business footing, and insures prompt and vigorous action.

Its officers and directors, being men of large practical experience and conceded integrity and ability, will enjoy the confidence of the country, and give assurance that the work will be prosecuted with vigor and success. The board of finance enters upon its duties with such a fund under its control as will enable it to begin the work of preparation upon a scale commensurate with the importance of the enterprise, and large enough to be a guarantee of success. It is, in some respects, the executive arm of the national commission, an agency which must henceforth practically manage the business matters involving the receipt and expenditure of moneys, subject to the oversight and approval of the national commission, and aided by its authority and influence.

The act of Congress creating it, and empowering it to procure stock subscriptions to the amount of ten millions of dollars, provides that the proceeds of said stock, together with the receipts from all other sources, shall be used by the said corporation, (the board of finance,) for the erection of suitable buildings with their appropriate fixtures and appurtenances, and for all other expenditures required in carrying out the objects of the act of Congress of March 3, 1871, and which may be incident thereto. The said act of Congress of June 1, 1872, reserves to the United States Centennial Commission the adoption of plans for the grounds and buildings, the establishment of rules and regulations governing rates for entrance and admission fees, and otherwise affecting the rights and privileges of exhibitors or of the public, and no grant or privilege connected with the buildings or grounds, or relating to the exhibition or celebration, shall be given or made without the consent of this commission; and that this commission shall appoint all judges and examiners, and award all premiums.

It may be well to consider if any reorganization of the commission is needed to enable it to operate harmoniously in conjunction with the board of finance. While the laws, in general terms, make it the duty of one corporation to plan and of the other to execute, there should be harmonious co operation, and the financial corporation should have the most perfect freedom of action consistent with the great national purposes of the exhibition. It is evident that the advisory and supervisory powers of the commission must be lodged either in one or more officers of the commission, who will permanently reside in Philadelphia, and who will give their whole time and



attention to the work. This delegation of authority will enable the commission to attend more promptly and thoroughly to the matters in which it must assume the initiative, and over which it retains exclusive control.

#### THE EXPENSES OF THE COMMISSION.

The operations of the commission cannot be made properly effective without the use of funds, which should be supplied by the National Government. When the business of the board of finance shall be organized and progressing favorably, and the sphere of operations of the commission shall be well defined and its uses and needs ascertained, Congress should and will make further recognition of the national character of the commission, by appropriating money for its expenses. Until this is done, the board of finance will, doubtless, make such provision for the actual expenses of the commission as will enable it to perform its duties. There would seem to be no impropriety in requesting the several States, in default of prompt action by the National Government, to imitate the example of Pennsylvania, making either general or special appropriations of money in aid of the national commission, or of their own representatives in the commission.

The board of finance is clothed with large powers, and can obtain sufficient funds to prepare and conduct the exhibition to a successful issue, yet it is important that the efficiency of the commission shall be maintained and increased. It gives the stamp of nationality to the enterprise. It represents the nation, and will be the medium of all business communications with foreign countries.

In so far as the exhibition and attendant ceremonies have a memorial character, the commission will have exclusive control, representing their respective States and Territories, as well as the Federal Government. The members of the commission should assume the duty of promoting every form of organization within their States which may be needed to secure adequate representation in the exhibition, and in other ways should render aid to the board of finance.

The important matter of the award of premiums having been reserved to the commission, it is suggested that the United States Government should assume the expense attendant upon this part of the business. The Government may also be asked to detail, for the purpose of the commission, such a representative body of national soldiery as will serve to guard the grounds and buildings, and assure protection to persons and property. The apparent apathy of Congress when heretofore appealed to for action should not discourage the friends of the exhibition.

It is a work of time to arouse the people thoroughly; but day by day the feeling will grow, and the enthusiasm of the nation will yet mount to the high point which we have seen it reach in Philadelphia, and inspire every American citizen to labor for its success.

The constitution of the commission by the appointment of its members from every State and Territory, who were obliged to meet for deliberation and action in the city of Philadelphia, rendered the transaction of business extremely difficult, and involved sacrifices on the part of the commissioners which few of those who are most directly benefited by *their* labors will fully appreciate.

The first meeting of the commission was held on March 4, 1872, and it remained in session nine days; there was a general representation of States and Territories, by gentlemen who made long journeys for the purpose.

The second meeting was held on May 22, 1872, and the commission remained in session seven days. At this meeting the representatives of thirty States and Territories were in attendance.

The third meeting of the commission was held December 4, 1872, and the session continued during eight days, the commissioners of thirty-five States and Territories being present.

Extensive powers were necessarily delegated by the commission to the executive committee, the members of which are largely engaged in business, and some of them are residents in distant States; yet they have found time to attend the sessions of the committee held in New York and Philadelphia, and the business of the commission has pursued them to their homes and exacted continuous labor and care. The funds under the control of the executive committee have been expended in such ways as seemed most likely to aid and strengthen the board of finance and insure the success of the exhibition.

The executive committee refer to their former reports and the minutes of the committee as showing the extent and results of their labors, and beg to say in relation to the appropriation of fifty thousand dollars, generously made by the city of Philadelphia for the preliminary expenses of the commission, that it has been scrupulously guarded, and no expenses incurred excepting those deemed requisite and necessary.

The statement of the expenses of the commission and executive committee, on file, will, it is believed, show that no enterprise of such magnitude as this was ever carried forward to the point which it has attained at less cost or with more careful economy.



When it was discovered that larger powers must be obtained to secure and administer the funds needed to prepare and conduct the exhibition, it was at once suggested that the United States Centennial Commission should be converted into a stock company by the act of Congress. The commission refused to favor such a course, but, on the contrary, recommended the incorporation of "The Centennial Board of Finance," a distinct body, upon which is devolved the entire control and management of the finances necessary for the erection of the buildings and all the other expenses of conducting the exhibition. Thus the commission, having relieved itself of all the details relating to finance, is enabled to devote its energies to those matters of organization and direction which will promote the success and splendor of the exhibition.

Inspired from the first with patriotic motives, it will maintain the purity of the national trust committed to it, and in return for its services and labors, and to the end that its efforts may be more effective, it asks the generous support and confidence of the American people.

DANIEL J. MORRELL, *Chairman.*  
 JAMES T. EARLE,  
 ALFRED T. GOSHORN,  
 GEORGE H. CORLISS,  
 WALTER W. WOOD,  
 GEORGE B. LORING,  
 JOHN G. STEVENS,  
 JOHN LYNCH,  
 JOSEPH R. HAWLEY,  
*Committee.*

---

EXHIBIT A.

STATE OF TENNESSEE.

Whereas the Congress of the United States, by act approved March 3, 1871, has provided for celebrating the one-hundredth anniversary of American Independence by an international exhibition of American and foreign arts, products, and manufactures, to be held under the auspices of the Government of the United States, in the city of Philadelphia, commencing in April, and ending in October, of the year 1876; and

Whereas by a subsequent act, approved June 1, 1872, an act of incorporation was passed by Congress, looking to the formation of a joint-stock company, with a capital stock of ten millions of dollars, whereby to provide means adequate for said exhibition; and

Whereas the apportionment of stock for Tennessee under said act of incorporation is much larger than the financial condition of our people may justify them in subscribing; and

Whereas the mode of raising funds for celebrating the hundredth anniversary of American Independence by joint-stock subscription necessarily tends to convert a great national occasion into a mere money-getting speculation, is inconsistent with the patriotic memories it is intended to commemorate, and utterly unworthy of the people whose liberty it is designed to fittingly immortalize: Therefore be it

*Resolved by the general assembly of the State of Tennessee,* That our Senators be instructed, and our Representatives requested, to propose, advocate, and sustain by their votes, such an appropriation by Congress for said Centennial Exhibition as may be necessary to make said proposed celebration thoroughly national and international, and worthy alike of the Government and people of the United States; provided that said appropriation shall not be given in aid of any corporation for that purpose.

*Resolved,* That a copy of the foregoing joint resolution, duly certified, be forwarded to our Senators and Representatives in Congress, with the least avoidable delay.

A. T. LALLY,  
*Speaker of the Senate.*

Adopted February 25, 1873.

U. S. McGAUGHEY,  
*Speaker of the House.*

Approved March 8, 1873.

JNO. C. BROWN,  
*Governor.*

I, C. N. Gibbs, secretary of state of the State of Tennessee, do certify that the foregoing is a copy of a joint resolution of the general assembly of the State of Tennessee, adopted February 25, 1873, the original of which is now of record in my office.

In testimony whereof I have herewith subscribed my official signature, and, by order of the governor, affixed the great seal of the State of Tennessee, at the department, in the city of Nashville, this 24th day of March, A. D. 1873.

[SEAL.]

CHAS. N. GIBBS,  
*Secretary of State.*



## STATE OF NORTH CAROLINA.

EXECUTIVE DEPARTMENT, STATE OF NORTH CAROLINA,  
*Raleigh, March 5, 1873.*

DEAR SIR: In response to your favor of the 13th ultimo, I inclose herewith resolutions of the general assembly of North Carolina, touching the Centennial Exhibition.

I am, very truly, yours,

TOD R. CALDWELL,  
*Governor North Carolina.*

HON. LEWIS WALN SMITH,  
*Secretary of U. S. Centennial Commission, 904 Walnut Street, Philadelphia.*

JOINT RESOLUTION of the general assembly in regard to the Centennial International Exhibition in the city of Philadelphia in the year 1876.

Whereas the Congress of the United States, by an act approved March 3, 1871, entitled "An act to provide for celebrating the one-hundredth anniversary of American Independence, by holding an international exhibition of arts, manufactures, and products of the soil and mines, in the city of Philadelphia, and State of Pennsylvania, in the year 1876," did provide for the promotion and control of the exhibition of the national resources and the useful arts, and for the proper commemoration of the Declaration of American Independence, on the 4th day of July, A. D. 1776; and

Whereas the mode adopted by Congress as above recited, by exhibiting to mankind the wonderful results of a century's growth of the nation, will most strikingly demonstrate the wisdom of our ancestors in risking their all for the attainment of self-government; and

Whereas the exhibition, if successfully carried out, will be of eminent practical benefit in disseminating among civilized nations information concerning the products of our forests and fields, minerals and ores still undeveloped, while our citizens will be enlightened by studying the processes and fabrics of the most advanced nations of the world; and

Whereas it is eminently proper that the people of North Carolina, who, by the Mecklenburgh Declaration of May 20, 1775, were foremost in suggesting the Declaration of 1776, which, with conspicuous fortitude, they defended and maintained, should take part in the commemoration of its hundredth anniversary:

1st. *The general assembly of North Carolina do resolve*, That this general assembly cordially approve the plan and objects of the Centennial International Exhibition, to be held in the city of Philadelphia, State of Pennsylvania, in the year 1876.

2d. That the people of North Carolina be earnestly recommended to heartily co-operate with the officers of said exhibition, in order to carry out its design to the fullest measure of success, in order to bring before capitalists and men of culture fair specimens of the natural and artificial products of the nation.

3d. That our Senators and Representatives in Congress be requested to promote all measures requisite for making said International Exhibition a truthful exponent of the progress of the nation.

4th. That the governor be requested to forward copies of this preamble and resolutions to all said Senators and Representatives.

Passed by the general assembly and ratified this 26th day of February, A. D. 1873.

J. L. ROBINSON,  
*Speaker of the House.*  
 C. H. BROGDEN,  
*President of the Senate.*

STATE OF NORTH CAROLINA, OFFICE SECRETARY OF STATE,  
*Raleigh, February 26, 1873.*

I, William H. Howerton, secretary of state, hereby certify that the foregoing is a true copy from the original resolution on file in this office.

[SEAL.]

WM. H. HOWERTON,  
*Secretary.*

## STATE OF VIRGINIA.

JOINT RESOLUTIONS submitted by Mr. Cochran, in regard to the Centennial Celebration and International Exhibition.

Whereas the Congress of the United States, by an act approved the 3d of March, 1871, and entitled "An act to provide for celebrating the one hundredth anniversary

of American Independence, by holding an International Exhibition of arts, manufactures, and products of the soil and mine, in the city of Philadelphia and State of Pennsylvania, in the year 1876," did require the appointment of commissioners from each State and Territory of the United States, with powers to promote, provide for, and exclusively control the exhibition therein authorized and given the national sanction; and

Whereas the general assembly of Virginia, by joint resolution approved the 23d of March, 1871, did heartily approve of the selection of the city of Philadelphia as the appropriate place to hold an exhibition commemorative of the happiest events of the Revolution, and of the virtues and achievements of the patriots and statesmen thereof, of whom so many of the most illustrious were sons of Virginia, whose descendants now people her borders, and are not less renowned for patriotism than her honored sires; and,

Whereas the occasion affords the people and government of the State an unequalled opportunity to exhibit in the most attractive light, before the aggregated capitalists and skilled laborers of our own and all other civilized countries, the great and varied though only partially-developed mineral resources, and the immense manufacturing and agricultural advantages of Virginia, which said resources and advantages, we believe, surpass those of any equal area of territory on this continent; and

Whereas the United States Centennial Commission, a body duly constituted under the said act of Congress of the 3d of March, 1871, has, since its organization, been diligently engaged in preparing and maturing plans for the proper holding of an exhibition, which it is designed to make the best yet seen, of the men and the works of the world; and

Whereas the members of this general assembly believe that the grandest result of the said exhibition will be the burial of all animosities because of section; the healing of all jealousies and heart-burning because of the past; and the restoration, in fact, of the friendly and fraternal relations which should exist between all the people of a common country; and

Whereas this general assembly is informed that the preparations for the proposed exhibition have been brought to that stage where, to insure its holding and the consequent accomplishment of the objects sought to be obtained thereby, it should receive the cordial commendation of the people and governments of the States and of the nation: Now, therefore, be it

*Resolved by the general assembly of Virginia,* That the time and place of holding the said centennial exhibition are hereby again indorsed.

*Resolved,* That the said centennial exhibition is warmly commended to the people as a means of restoring prosperity to Virginia, and sincere good-feeling between all the people of the United States.

*Resolved,* That our Senators and Representatives in Congress be, and they are hereby, instructed to promote, by their votes and influence, all measures of national legislation necessary and requisite to make said centennial exhibition a success worthy of the nation, and of the great men and events it is designed to commemorate.

*Resolved,* That the governor is hereby requested to cause copies of this preamble and resolutions to be sent to each of our Senators and Representatives in Congress.

---

## STATE OF KENTUCKY.

JOINT RESOLUTIONS F, in relation to the one hundredth anniversary of the Independence of the United Colonies of North America. Presented by Hon. A. G. Talbott, of Boyle County, Kentucky.

Whereas the Congress of the United States, by an act of March 3, 1871, the State of Virginia, by a joint resolution approved March the 23d, 1871, and various other States by previous action, have made provision for an international exhibition of arts, manufactures, and products of the soils and mines of this country, in celebration of the one hundredth anniversary of American Independence, and designating the city of Philadelphia, in the State of Pennsylvania, as the point at which this commemorative event shall transpire; and

Whereas the State of Virginia, by special expression, has invoked such States as were once a part of her territory, and are still bound to her by ties of blood, sympathy, and interest, to a free and full co-operation in this patriotic measure; and

Whereas Kentucky being first-born to the Mother of States, and holding with jealous enthusiasm the knowledge of her parentage, proud in her heritage of blood, and rich in the endowments which nature has lavished upon her, knowing her vast resources of agricultural, mineral, and intellectual wealth, always anxious for its development, and willing to contribute abundantly to the world's commerce and the republic's prosperity: Therefore, be it



*Resolved by the general assembly of the Commonwealth of Kentucky,* That we heartily indorse the action of Congress, and the several States acting independently in the premises, and commend to the people of our sister States of the territory of Virginia the propriety of like expression.

*Resolved,* That we believe the successful holding of this convention at the point specified will not only operate favorably in the development of our State and national resources, but do much toward cementing the ties of our federative compact.

*Resolved,* That we also commend to the people of Kentucky the necessity of preparing for this event, and urge upon them the propriety of being fully represented in all their resources of wealth, industry, and intelligence.

*Resolved,* That our senators and representatives in Congress are hereby requested to consider favorably all measures of national legislation necessary to make the exhibition worthy of the occasion and a credit to the American people.

*Resolved,* That the governor is hereby requested to cause copies of this preamble and resolutions to be sent to each of our Senators and Representatives in Congress.

---

#### EXHIBIT B.

RULE 1. Books of subscription for stock of the centennial board of finance will be provided by the commission, containing blank subscription certificates, forms of subscription, and marginal record, as follows:

SUBSCRIPTION CERTIFICATE.

No.....  
Place,.....  
Date, .....  
.....share. Par value, \$10.

Payments on this stock [may] be made [in full or] as follows: 20 per cent. on subscription; 20 per cent. on or before the first Monday of May, 1873; 20 per cent. on or before the first Monday of July, 1873; 20 per cent. on or before the first Monday of September, 1873; 20 per cent. on or before the first Monday of November, 1873. Unless each installment be paid when due, it is hereby agreed that the said stock and all payments thereon shall, at the option of said corporation, be forfeited without notice or proceedings, either at law or in equity, for that purpose.

I have this day received from....., agent, the

above-mentioned subscription certificate for  
.....  
share.....of stock of the Centennial Board of Finance, and have paid.....

.....dollars thereon.

.....  
(Name of subscriber.)

.....  
(Post-office address.)

CERTIFICATE OF SUBSCRIPTION FOR STOCK OF THE CENTENNIAL BOARD OF FINANCE.

CAPITAL STOCK, \$10,000,000.

SHARES, \$10 EACH.

Subscription certificate No.....State of.....

This certifies that.....

has subscribed for and paid.....

dollars upon.....share....of the capital stock of

the Centennial Board of Finance, incorporated by an act of Congress approved June 1, 1872.

The holder of this subscription certificate is entitled to one vote upon each share it represents, and to receive a certificate of stock from the Centennial Board of Finance upon the surrender of this certificate to the said corporation, and the payment of the balance due upon the subscription.

Payments on this stock [may] be made [in full or] as follows: 20 per cent. on subscription; 20 per cent. on or before the first Monday of May, 1873; 20 per cent. on or before the first Monday of July, 1873; 20 per cent. on or before the first Monday of September, 1873; 20 per cent. on or before the first Monday of November, 1873. Unless each installment be paid when due, it is hereby agreed that the said stock and all payments thereon shall, at the option of said corporation, be forfeited without notice or proceedings, either at law or in equity, for that purpose.

Dated at.....this.....day of.....1873.

.....  
(Name of agent.)



RULE 8. Payments upon the stock may be made in full at the time of subscription, or as follows: Twenty per cent. on subscription; the balance on the call of the board of finance, in installments of 20 per cent. each, at dates not earlier than the first Monday of May, July, September, and November, 1873. [This rule modifies Rule 1.]

The other rules remain as heretofore published.

---

EXHIBIT C.

[Form 29.]

1776.

UNITED STATES CENTENNIAL COMMISSION.

1876.

*To the People of the United States :*

Congress, recognizing and responding to the patriotic wishes of the people, provided by acts approved March 3, 1871, and June 1, 1872, respectively, that in the year 1876 the centennial anniversary of the Independence of the United States of America shall be celebrated at the city of Philadelphia by an international and universal exhibition of the grandest and most comprehensive character.

The first of those acts provided for the appointment of the United States Centennial Commission, consisting of two members from each State and Territory, to organize and conduct the exhibition. That commission has been duly constituted, and has actively entered upon its duties.

By the second act, in order to secure the money necessary for the expenses of this exhibition and celebration, Congress incorporated the Centennial Board of Finance as auxiliary to the Centennial Commission, and provided for the issue of stock to the amount of ten millions of dollars, in one million shares of ten dollars each; an amount which, if assessed equally among the people, would not require more than twenty-five cents from each person.

In creating the Centennial Board of Finance, Congress had also in view the general distribution of the stock among the people of the States and Territories in the ratio of their population. The people, in accordance with the provisions of the act, now have the opportunity to become owners of the stock, and to share in the management in proportion to the amount they subscribe.

Books will remain open in the hands of the agents until the 1st day of March next, when the stockholders who have then subscribed will be notified of the time for the election of the board of directors, which will be after thirty days' notice. At the time of subscribing to the stock an installment of two dollars per share must be paid to the agent; after the organization of the board of finance, the balance due will be payable when called for by them, in installments of two dollars per share, which will not be earlier than May, July, September, and November of 1873; or the whole amount may be paid at the time of subscribing. After the organization, the agents of the board of finance will receive subscriptions without regard to the quota allotted to each State.

An undertaking so patriotic in its conception, so vast in its proportions, and so useful in its results, commends itself to the hearty sympathy and support of an intelligent people. Patriotism, as well as an appreciation of the beneficial influences of well-organized exhibitions, should impel all citizens to lend a helping hand. It is the duty of the commission to prepare the way and open the doors, but the people, in their sovereign right and strength, must make the exhibition. By their aid alone can it be made a just and comprehensive display of the industrial, intellectual, and moral development of the nation during the first century of its existence.

Each subscriber will receive, after the organization of the board, a large engraved certificate of stock executed in the Treasury Department of the United States in the best style of the engraver's art, bearing designs illustrating our national progress, and commemorative of the centennial exhibition.

It is hoped that there will be no pecuniary loss to any subscriber; but should there be, the certificate will, in value, go far toward compensating for any such loss, not only as a beautiful work of art, but as an heir-loom to be handed down from generation to generation, doing perpetual honor to the patriotism of the subscriber. The names of the subscribers will also appear in the printed records of this great national celebration.

By an early subscription you will be identified with the grand industrial monument which the willing and patriotic hands of American citizens will rear to testify their

reverence for their self-sacrificing ancestors, and to mark the progress made in a century under the operations of a free government.

DANIEL J. MORRELL, *Pennsylvania,*  
Chairman.

JOHN V. L. PRUYN, *New York,*  
JAMES T. EARLE, *Maryland,*  
GEORGE H. CORLISS, *Rhode Island,*  
JOHN LYNCH, *Louisiana,*  
JOHN G. STEVENS, *New Jersey,*  
WALTER W. WOOD, *Virginia,*  
GEORGE B. LORING, *Massachusetts,*  
ALFRED T. GOSHORN, *Ohio,*  
Executive Committee.

---

[Form 32.]

1776.

INTERNATIONAL EXHIBITION, PHILADELPHIA.

1876

OFFICE OF THE UNITED STATES CENTENNIAL COMMISSION,  
No. 904 Walnut Street, Philadelphia, Pa., February, 1873.

*To the Clergy and Religious Associations of the United States :*

The clergy of all denominations in the United States are well aware that the centennial anniversary of our independence as a nation is to be celebrated at the city of Philadelphia in 1876, in accordance with the terms of the act of Congress, by an exhibition of the art and industry of all the nations of the earth. That exhibition will not be merely a gigantic "World's Fair," devoted exclusively to the material world, but it is designed to be a complete epitome of human progress, appealing to the profoundest sentiments of the devout and philanthropic; calling for their prayers, their labors, their hearty, prompt, and active co-operation, and that of every citizen interested in the welfare of mankind.

Occupying a prominent place in the grandest classification of objects and subjects ever adopted for any exhibition, is Group 95, comprehending the general subject of "Religious Organizations and Systems," and subdivided as follows :

CLASS 941.—Origin, nature, growth, and extent of various religious systems and sects. Statistical and historical facts.

CLASS 942.—Religious orders and societies, and their objects.

CLASS 943.—Societies and organizations for the propagation of systems of religion by missionary effort.

CLASS 944.—Spreading the knowledge of religious systems by publication—a class designed to include such publication as those of the Bible and Tract Societies, together with statistics of their origin, growth, and progress.

CLASS 945.—Systems and methods of religious instruction and training for the young. Apparatus and appliances for teaching in the family; Sabbath-school furniture and apparatus, &c.

This group in the classification is subject to revision and enlargement, should necessity or expediency require it. The solemn duty devolves upon all who are actively engaged or interested in the cause of religion, of co-operating and laboring with zeal toward making the representation under each of the classes such as shall do justice to the great organizations and systems which extend throughout our land, and constitute our claim to a fellowship among the Christian nations. This group affords the broadest basis for religious representation. It is not limited in its scope or range. It is designed to receive any visible or tangible representation of the condition and progress of any faith, creed, denomination, or sect.

Let us consider, with all reverence and awe, of what this great exhibition is commemorative. It marks our estimate of a political event of more momentous import in universal history than any which had occurred before, or any which has succeeded it, in its bearing upon the destinies of the human race; especially in establishing upon indestructible foundations that freedom of conscience in matters of religious faith which is so fully enjoyed throughout our wide domain. It is commemorative of the birth of a nation whose progress is absolutely without any parallel in the world's experience.

The commemoration of the birthday of our nation, after a century of such prosperity, expansion, and progress, and after such a development of the material resources of this mighty continent! What should it be, to make it worthy of the people so blessed?

If we are the Christian nation we are reputed to be, you cannot, if you would, divest it of its character as an oblation to the Most High, and as a crucial test before Him



and mankind of our estimate of the blessings we enjoy ; of the sincerity of our patriotism ; of our appreciation of civil and religious liberty ; and of our sense of duty as a member of the great community of nations. It must be either all this or nothing—in its moral import. It must, by its magnitude, its thoroughness of representation, and its moral and intellectual grandeur, manifest, in the presence of the thronging millions of our countrymen, and before the assembled delegations of all countries, so far as possible, our gratitude to God, the source of our prosperity and happiness as a people.

Presenting a review of the past in every sphere of useful industry, art, or mental activity, as an inspiring and suggestive guide for the future, it should form a starting-point from which we may enter, by a new and elevated vantage-ground, upon the course of improvement which is open to us in the coming century. It is a great national festival, in which the prominence and influence of the religious element in our life as a people should not be ignored. They will depend for their illustration upon the part taken by the clergy and religious associations of all denominations in the movement. The clergy should awaken their congregations by carefully considered and earnest representations of the manifold advantages of the complete success of the celebration to religion and in every other respect. The profound and far-reaching religious influences which, through this mighty agency, may be made to mold and guide the religious character and sentiment of the age upon higher and higher standards of conduct of life and earnestness of faith, should be clearly set forth.

The whole moral and religious tone and effect of this stupendous presentation of the varied agencies and instrumentalities represented by the comprehensive word "progress," may be controlled by the great and influential body to whom the people look for religious instruction in such a manner as to confer inestimable blessings upon the generations who are so soon to fill our places in the ranks of life. Neglect of this golden opportunity may, on the other hand, prove an irreparable misfortune to the cause of religious advancement, by the surrender of the great temple of art and industry to the spirit of materialism, deprived, in a great measure, of the hallowing influence which should consecrate material blessings as gifts for the use and benefit of man, designed, in promoting his comfort and happiness, to inspire in his heart a grateful recognition of the power and love of the Divine source from which they emanate.

So grand a subject, one so closely connected with the spiritual welfare of the race, may well become the theme of Heaven-inspired eloquence from every pulpit in the land—not in mere passing reference, but in exhaustive presentation of the endless catalogue of reasons in favor of carrying out the duly-enrolled fiat of the national will, as expressed through the acts of Congress.

The nation stands committed to the project before the world. Retraction now would be a ludicrous and disgraceful failure of the great republic, which assumes to lead the vanguard of progress, to do what England, France, Germany, and other powers have done, and what Austria is just about to do for the instruction and entertainment of mankind, and that, too, after having declared our purpose to do it, and to do it on a grander scale than any of our predecessors. We believe that no thought of failure is tolerated in any patriotic mind, or in any heart that has a spark of national pride. Yet many are displaying an apathy and procrastination which, if not corrected, would prove fatal to that supreme success which alone will comport with the prestige and dignity of the nation. It is simply because they have no correct idea of the importance of time as the first essential of success.

The success or failure of this undertaking is before the people, dependent entirely upon the deliberative decision which their action in regard to subscriptions will constitute.

The national commission, selected by the governors and appointed and confirmed by the General Government, are powerless to proceed further than they have done, until the voice of the people proclaims to them, through the subscription books, that the necessary capital is sufficiently assured to warrant them in erecting the buildings and perfecting the arrangements for inviting foreign exhibitors.

Here it is that the importance of time for preparation *after* the decision of the people is known becomes apparent. It is no less essential than money.

Foreign nations must have time to consider and act upon the invitation, and, in many cases, to wait the action of the legislative assemblies before deciding, organizing their commissions, and making the necessary appropriations ; and if they do not have ample time, they cannot be expected to accept.

They cannot be invited or notified by the President of the United States until, according to the terms of the act of Congress, the governor of the State of Pennsylvania shall have informed him that provision has been made for the erection of suitable buildings for the purposes of the exhibition.

Foreign countries and our own country have to be canvassed, and the people informed of the nature of the exhibition. Careful selections must be made from articles representing every industry and resource. Ample time will be required for the production of works of art and large machinery, and many other articles which impart splendor and instructiveness to such exhibitions.

Besides the consumption of time in the transportation of articles from abroad, much will be consumed in the erection of the vast buildings, and the arrangement of the goods in them.

The inclosed printed papers contain information as to the organization of the Centennial Board of Finance, and the general purposes of the exhibition.

Your attention to the subject, in all its bearings upon the temporal and spiritual welfare of the people, is most respectfully invited.

By order of the executive committee of the United States Centennial Commission.

WILLIAM P. BLAKE,

*Executive Commissioner.*

DANIEL J. MORRELL, *Pennsylvania.*

*Chairman.*

JOHN V. L. PRUYN, *New York,*

GEORGE H. CORLISS, *Rhode Island,*

JOHN G. STEVENS, *New Jersey,*

GEORGE B. LORING, *Massachusetts,*

JAMES T. EARLE, *Maryland,*

JOHN LYNCH, *Louisiana,*

WALTER W. WOOD, *Virginia,*

ALFRED T. GOSHORN, *Ohio.*

*Executive Committee.*

[Form 33.]

1776.

INTERNATIONAL EXHIBITION, PHILADELPHIA.

1876.

OFFICE OF THE UNITED STATES CENTENNIAL COMMISSION,  
No. 904 Walnut Street, Philadelphia, Pa., February, 1873.

*To the Officers and Teachers in the Universities, Colleges, and Schools of the United States :*

The United States Centennial Commissioners, in the execution of the trust committed to them, desire to direct the attention of officers and teachers in universities, colleges, and schools to the relations which the proposed international exhibition must sustain to the educational interests of our country.

The plan adopted embraces the presentation of the arts and industries of the world in such a way that the best facilities will be afforded for careful analysis and generalization. "These *simultaneous* views of the condition of the whole globe as to material arts" are useful beyond computation, not only to industrial development, but also to scientific and literary progress.

The classification embraces ten departments :

- I. Raw materials—mineral, vegetable, and animal.
- II. Materials and manufactures used for food, or in the arts, the result of extractive or combining processes.
- III. Textile and felted fabrics; apparel, costumes, and ornaments for the person.
- IV. Furniture and manufactures of general use in construction and in dwellings.
- V. Tools, implements, machines, and processes.
- VI. Motors and transportation.
- VII. Apparatus and methods for the increase and diffusion of knowledge.
- VIII. Engineering, public works, architecture, &c.
- IX. Plastic and graphic arts.
- X. Objects illustrating efforts for the improvement of the physical, intellectual, and moral condition of man.

The departments will be divided into groups and classes, to facilitate the arrangement and display of the various articles placed on exhibition.

If the ideal be in any degree realized, the attractions of the place will bring together learned and scientific men from all parts of the world, and not the least of the good results of the exhibition will be the interchange of thought.

Dr. WHEWELL characterized the London Exhibition as "the great university of 1851."

Sir DAVID BREWSTER said, in speaking on the same subject: "I am persuaded that the exhibition will exercise the most salutary influence, in so far as it will turn the attention of the influential classes of society to the vast national importance of encouraging science and the arts, by placing the men who advance them in a better position than they have hitherto occupied in this country."



The Centennial Commission makes a special appeal to our citizens of liberal culture to assist in making the International Exhibition of 1876 more successful than any of the previous expositions of the world.

As opportunity may offer, we ask that, by lectures and correspondence, you will assist in commending the great enterprise as worthy of confidence and support.

In behalf of the United States Centennial Commission.

JOS. R. HAWLEY,

*President of the United States Centennial Commission.*

LEWIS WALN SMITH,

*Temporary Secretary of the United States Centennial Commission.*

---

[Form 39.]

1776.

INTERNATIONAL EXHIBITION, PHILADELPHIA.

1876.

UNITED STATES CENTENNIAL COMMISSION,  
No. 904 Walnut Street, Philadelphia, April 5, 1873.

*To the Officers of the General Government, and of the Governments of the several States:*

GENTLEMEN: You are doubtless aware that the United States Centennial Commission has been organized, in obedience to the national will, as declared in acts of Congress, for the purpose of rendering the celebration of the one-hundredth anniversary of American Independence, which is to be held at Philadelphia in 1876, a celebration that will live in history as the grandest and most sublime commemoration the world has ever witnessed.

That this occasion might afford to every nation the fullest and most comprehensive manifestation of what our republic has achieved in developing civilization, and extending its sway, Congress adopted a plan by which all the products of the globe that minister to human wants, all the results of industry, the choicest specimens of every art, the triumphs of genius in every field of intellectual activity—whatever, indeed, affects the moral and physical condition of the race, are to be brought together at the birthplace of the nation, in an international exhibition, wherein the system of arrangement and classification shall be such as to afford a comparative view of each country's share in the movement of progress.

This plan was conceived, and will be carried out, in the highest interests of philanthropy and peace. Unity and concord among our own people, and between this and other nations, stand foremost among the sentiments that inspired the project. To acknowledge the true dignity of labor, to develop the best interests of capital, to represent in this colossal compendium of civilization the fruits of the creative power, both of the hand and of the brain, are some of the grounds upon which this national movement appeals to the patriotism of our countrymen for a support that shall make its success triumphant and complete. Such support we confidently look for at your hands.

A celebration, the great object of which is to promote the national glory, and to prove the beneficence of the institutions under which we live, should receive peculiar sympathy and support from those who have been selected to act as the official representatives of that system of government, the success of which the "Centennial" is to celebrate. Whether by the direct vote of the people, or by official appointment, you hold representative positions, and consequently your obligations on such occasions as the present are greater than those of the private citizen, and your example must sensibly influence the action of your townsmen and neighbors. Hence we do not hesitate to ask your most active aid in promoting an object so eminently deserving the zealous co-operation of every American.

Pennsylvania, and Philadelphia, her great manufacturing metropolis, have led the way in furnishing their proportion of capital with noble generosity, through subscriptions by her citizens, and appropriations by the State and city governments, which amount already to more than three times the quota of stock apportioned to the State, and are still increasing their contributions. The commission now awaits the response from other quarters to this worthy example. It feels assured that with a correct understanding of the objects in view, every public officer will feel it both a duty and a pleasure, by subscription and co-operation, to exert himself to the utmost to hasten the success of an exposition that must prove so great a benefit to every section of our common country.

JOS. R. HAWLEY,

*President.*

LEWIS WALN SMITH,

*Secretary.*

S. Ex. 30 —6



[Form 34.]

1776.

INTERNATIONAL EXHIBITION, PHILADELPHIA.

1876.

OFFICE OF THE UNITED STATES CENTENNIAL COMMISSION,  
Philadelphia, Pa., 1873.*To the Scientific, Industrial, and Commercial Organizations in the United States :*

The anniversary of the Independence of the United States, in the year 1876, is to be celebrated by an exhibition of the products, arts, and industries of the country, and of the world. This is in accordance with an act of Congress approved March 3, 1871. By this act the task of preparing and superintending the exhibition was imposed upon the United States Centennial Commission, consisting of two members from each of the States and Territories. The commissioners have three times met in general session, a permanent organization has been effected, and the chief outlines of the plan for the exhibition have been agreed upon.

This exhibition is to be international and universal—international inasmuch as all nations will be invited to participate in it; and universal because it will include a representation of all natural and artificial products, all arts, industries, and manufactures, and all the varied results of human skill, thought, and imagination.

The outlines of a simple, yet comprehensive classification, have been adopted. There will be ten departments, each subdivided in ten groups, and these again into classes. The details of this classification are now being elaborated, and will be published in due season, together with such rules and regulations as may be found necessary for the proper conduct and management of the exhibition.

It is intended that ample space shall be assigned to each State, Territory, and foreign country, for a just and proper display of their products. It is believed that not less than fifty square acres of floor space, under roof, will be required for this purpose. A site combining the advantages of a sufficient extent of level ground, with picturesque and cultivated surroundings, easy of access by rail, water, and by ordinary roads, has been assigned for the buildings and grounds at Fairmount Park, in the city of Philadelphia. The exhibition will open in April, and close in October.

Each State of the Union will be expected to send its peculiar products, illustrating its resources, both developed and undeveloped. A complete exhibition of this kind by all the States will afford the means of comparing their industrial condition and capabilities. The products of mining and of agriculture will occupy a large portion of the space allotted to each State, and will receive their just share of attention in this universal display.

An undertaking so patriotic in its conception, so vast in its proportions, and so useful in its results, commends itself to the hearty sympathy and support of an intelligent people. Patriotism, as well as an appreciation of the industrial, educational, and moral influences of well-organized exhibitions, should impel all citizens to lend a helping hand. It is the duty of the commission to prepare the way and open the doors, but the people, in their sovereign right and strength, must make the exhibition. By their aid, alone, can it be made a just and comprehensive display of the industrial, intellectual, and moral development of the nation during the first century of its existence.

The commission not only relies with confidence upon the aid of the people in general, but it hopes to receive the co-operation of the scientific, industrial, and commercial organizations of the country, and particularly of those which have aided in directing and realizing the popular demand for agricultural and industrial exhibitions.

Attention is invited to the annexed schedule of the ten departments of the classification.

JOSEPH R. HAWLEY,  
*President of the Commission.*LEWIS WALN SMITH,  
*Temporary Secretary.**Schedule of the ten departments of the classification.*

- I. Raw materials: Mineral, vegetable, and animal.
- II. Materials and manufactures used for food, or in the arts, the result of extractive or combining processes.
- III. Textile and felted fabrics, apparel, costumes, and ornaments for the person.
- IV. Furniture and manufactures of general use in construction, and in dwellings.
- V. Tools, implements, machines, and processes.
- VI. Motors and transportation.
- VII. Apparatus and methods for the increase and diffusion of knowledge.
- VIII. Engineering, public works, architecture, &c.
- IX. Plastic and graphic arts.
- X. Objects illustrating efforts for the improvement of the physical, intellectual, and moral condition of man.



## EXHIBIT D.

[Form 30.]

1776.

## INTERNATIONAL EXHIBITION.

1876.

OFFICE OF THE UNITED STATES CENTENNIAL COMMISSION,  
*Philadelphia, January, 1873.*

SIR: I inclose you, herewith, a copy of the amended rules, adopted by the executive committee of the United States Centennial Commission, in reference to the subscriptions to the stock of the Centennial Board of Finance, together with a number of copies of a prospectus to be circulated freely among the people. In accordance with the rules, you will please forward, on the first day of March next; to this office, a transcript of the subscriptions received by you, but will hold the originals, subject to the orders of the board of finance, when organized. It has also been decided to require only the payment of the first installment of two dollars per share, at the time of subscription, and leave all other installments to be payable at the call of the board of finance, but not sooner than May, July, September, and November, of 1873. To insure the success of so great and patriotic an enterprise as the centennial celebration of the birth of our nation, it is not too much to ask the earnest co-operation of every citizen of our land. By a little energy, each section can be made to furnish its share of the necessary funds, and I would earnestly ask of you as active an aid as you can lend to promote the end in view.

Very respectfully,

DANIEL J. MORRELL,  
*Chairman of Executive Committee.*

[Form 38.]

1776.

## INTERNATIONAL EXHIBITION, PHILADELPHIA.

1876

UNITED STATES CENTENNIAL COMMISSION,  
*No. 904 Walnut Street, Philadelphia, ———, 187—.*

Desiring to elicit competent artistic talent and skill in the production of a design for an engraving on steel of a form of certificate of stock of the Centennial Board of Finance, the United States Centennial Commission invite a fair competition of those designers and artists who may be disposed to make the effort to gain the honor and reward which will be accorded to the successful competitor.

The sum of \$500 in currency will be paid to the person whose design may be accepted. Those who are not successful will have no claim to compensation for their labor, but honorable mention will be made of those designs according to the order of merit which they exhibit. Should any part of a design, the whole of which is not taken, be desired for use, a special proposal will be made to the designer, giving the terms upon which such part will be taken.

The selection and decision will be made by the executive committee of this commission during the month of May, 1873.

The outside dimensions of the design, exclusive of margin, will be sixteen by eleven inches. It may be freely sketched in India-ink, or pencil, or in pen-drawing. The latter is considered preferable. If that form is adopted, it would be preferred that the design should be drawn on a larger scale, preserving the same relative dimensions, so that the work may be reproduced by the heliotype or some other photo-engraving process, in which process the reduction may be made photographically.

No colors should be used in the design, and if reproduction by photographic engraving is to be adopted, all shadings should be made by lines or etching and not by tints.

The designs should be illustrative of the progress of the United States in the peaceful arts and sciences—agriculture, manufacture, commerce—the development of the country during the century; and those triumphs of physical science which enable man to master and use the forces of nature. They should also symbolize the freedom and representative character of our institutions.

Open space must be left amounting to about one-fourth of the area to be covered by the design, for the insertion of the wording of the certificate, and the signatures of the president and secretary of the Centennial Board of Finance. The lettering will, however, be subordinated as much as possible to the artistic requirements of the design.

The designs should be forwarded to the office of United States Centennial Commission, No. 904 Walnut street, Philadelphia, as early as the 1st of May next.

JOS. R. HAWLEY,  
*President.*

LEWIS WALN SMITH,  
*Secretary.*



## EXHIBIT E.

*Letter sent by the Hon. Daniel J. Morrell, United States Centennial Commissioner for Pennsylvania, to his excellency the governor, and by the governor communicated to the senate and house of representatives of Pennsylvania, on Friday, February 7, 1873.*

JOHNSTOWN, February 4, 1873.

DEAR SIR: Personally, and on behalf of my colleagues, I desire to convey to you an acknowledgment of the very favorable impression left upon our minds by the interview which you accorded to the Executive Committee of the Centennial Commission and those who kindly accompanied us, and by the assurance that anything you could legally do as chief magistrate of the Commonwealth to aid us in our work would be cheerfully done.

Since our interview I presume you have seen, in one or more newspapers of the State, editorial articles which strove to identify the work of the National Centennial Commission with schemes for the removal of the State capital, and strongly opposing any appropriation by the legislature for centennial purposes. I have been much surprised at this display of unfairness and illiberality, and may attribute to it more importance than it deserves. At a time when all the States are appealed to for subscriptions to the stock of the Centennial Board of Finance, and when the other members of the commission are constantly asking, what will Pennsylvania do, anything like a division of sentiment within the State is to be deplored.

It was to be expected that the proposal to hold a national celebration and international exhibition under the authority and patronage of the Federal Government at Philadelphia would meet with opposition from the cities and citizens of other States, who might wish to claim so rare and valuable a distinction for themselves, or dislike to see it bestowed upon Pennsylvania. Whatever feeling of this sort once existed has been happily subdued. Through the patriotic labors of the Centennial Commission, nobly aided by the newspaper press, the country at large is beginning to understand that the enterprise is not local in its character, but national; that Philadelphia was chosen because it was the birthplace of that National Independence which it is the purpose of the centennial to celebrate, and that questions of local or personal interest are insignificant when compared with the considerations of national reputation, honor, and profit involved in the successful prosecution of a work which is not only of moment to our own land, but also to the whole world.

The members of the national commission have been giving their time and labor to the task of combating prejudice and enlisting popular favor in the States which they represent, and the press of the country, with a few exceptions, has generously and without asking or receiving pay, published such matters connected with the proceedings of the commission as were of public interest, and has rendered other friendly services of inestimable value.

In accepting their important trust under the act of Congress, which was incomplete in that it supplied no means for carrying its provisions into effect, the national commissioners felt that if they engaged earnestly in their work popular sentiment would sustain them, and a way would open for the successful prosecution of their labors. I believe that Congress will come to the aid of the commission when it has made such progress as to deserve it, and will make such an appropriation as will place the agents of the Government upon an independent and respectable footing. The national commission looks to the State of Pennsylvania and the city of Philadelphia to make such a grant as will show that here, where the money is to be expended, there is confidence in the enterprise, and when this action is taken we have no doubt that the people of this and other States will speedily contribute, through the Centennial Board of Finance, all the funds needed to prepare and conduct the exhibition.

The members of the Centennial Commission, in obtaining the passage of the act of Congress authorizing the organization of the board of finance, desired to relieve themselves from the custody of the large sums of money to be received and expended in managing the exhibition, and from all suspicion of enjoying any pecuniary interest or profit.

They did not, however, abdicate their functions, and they retain such supervision of the proceedings of the board of finance as is intended to give a national indorsement of its acts, to insure the proper conduct of the exhibition, an equitable distribution of its revenues, and the preservation of its history.

Efforts have been made to give the board of finance a national character, and to make its management thoroughly representative. The stock is now being offered for a hundred days in each State and Territory of the Union. When the books shall be closed, it is provided that one hundred subscribers of stock shall be named by the Centennial Commission, from whom the stockholders shall elect a board of twenty-five directors. Such a provision was necessary, because it would be impossible for stockholders, scattered all over the country, to confer with each other, or even to know the representative men who should be elected directors. The commission resolved at its last session that fifteen candidates should be residents of the city of Philadelphia, and



imposed the duty of making all nominations upon the executive committee. It is the purpose of the committee to place in nomination men of noted integrity and ability, whose names will be an assurance of honest and skillful management. They are not unmindful of the suspicion which attaches at this time to all projects involving the outlay of large sums of money, yet they do not believe that the country "has lost the breed of noble bloods," or that it will be difficult to find citizens who may be trusted to render faithful service, and who will esteem it a sufficient reward to be known to future generations as managers of the international exhibition which celebrated the centennial of American Independence.

The members of the national commission, who come together as the representatives of States, feel that the work committed to them is of a different character from ordinary business enterprises. While they hope and believe that the stockholders of the board of finance may receive back their subscriptions, with an added profit, they have found it easy to think that this would not be the primary consideration in the minds of the people.

The commissioners have seen in the memorial character of the centennial celebration an opportunity of obliterating any animosities which may linger in the wake of the late destructive civil war, and of renewing the devotion of all citizens to their common country. They know that while Philadelphia and Pennsylvania must enjoy some exceptional advantages from the international exhibition, the whole country will be immeasurably benefited by it. There is no art it will not encourage, no industry it will not quicken, and its impulses for good will not be limited to our own land, but extend to the other nations of the earth.

The mass of people cannot be at once lifted up to a right appreciation of the character and purposes of the enterprise which we are carefully and painfully organizing. It will take time to reach them, and many agencies to teach them; and time is just the thing which we have not to spare. There are urgent reasons for appealing to the city of Philadelphia and the State of Pennsylvania to make such liberal advances as will enable you to discharge an important duty under the original act of Congress creating the Centennial Commission. It enacts that whenever you shall inform the President of the United States that provision has been made for the erection of suitable buildings for the purposes of the exhibition, he shall make proclamation setting forth the time when, and place where, it will be held, and communicate this information officially to the representatives of foreign nations, with such other matters concerning the exhibition as may be of interest to the people of their countries. This formal recognition and notification cannot be much longer delayed without great injury. It can be obtained immediately, if the legislature will take such action as has been solicited by the executive committee and citizens of the State.

Our State can well afford to make a donation of a million dollars to insure the success of the exhibition, but it is not asked to do so. It will receive a full consideration for its grant, for the money is to be expended in the erection of a permanent public building, which, after serving the uses of the exhibition, will be made a depository of things which are valuable, because of their association with events of national importance, or as illustrating the progress of civilization and the arts in our new country. It will remain a worthy memorial of an event of which the nation may be proud, and the unborn millions who will celebrate the second centennial of American Independence may esteem it as one of their chiefest treasures. The State has the money to spare, and I ask if it can be put to nobler use?

Many schemes involving the appropriation of money are pressed upon the attention of the legislature, and it is proper that due caution should be exercised. If other matters do not receive favorable consideration this year, they may next, and delay may occasion no loss, but the claims of the centennial are exceptional, and the present opportunity of favoring it will never return. It is my duty to say that the executive committee, from what they know of the status of the enterprise, deem it to be of the utmost importance that there should be favorable action. In no other way can there be prompt compliance with the provisions of the organic law, within cited, and it is essential that the members of the national commission should be enabled to point to the example of Pennsylvania as one which should be followed by the States which they represent.

Up to this time the committee has done zealously what is deemed best for the cause, and it is possible that mistakes have been made, but we do not think that the application to the legislature is mistaken or can possibly fail, or that the confidence which the committee has placed in the intelligence, patriotism, and liberality of the people of Pennsylvania and their representatives will prove to be unfounded.

It is because I know you to have deeply at heart the welfare of our State that I trespass so far upon your attention, and earnestly invoke your good offices in aid of the commission and the citizens who have acted with them in this matter.

D. J. MORRELL,  
*Commissioner of Pennsylvania.*

His Excellency JOHN F. HARTRANFT,  
*Governor of Pennsylvania.*



## EXHIBIT F.

CONCERT HALL, *Philadelphia, April 22, 1873.*

A meeting of the corporators and others, subscribers for stock of the Centennial Board of Finance, was this day held in Concert Hall, in the city of Philadelphia, at 12 o'clock, noon.

At the hour named, there being more than one hundred stockholders present, the meeting was called to order by Hon. Joseph R. Hawley, president of the United States Centennial Commission, who thereupon read to the meeting sections 1, 2, 3, and 4 of the act of Congress entitled "An act relative to the Centennial International Exhibition, to be held in the city of Philadelphia, State of Pennsylvania, in the year 1876," approved June 1, 1872.

The call issued by the United States Centennial Commission, pursuant to the said act of Congress, was then read by Lewis Waln Smith, the secretary of the said commission, in the words following, to wit:

"OFFICE OF THE UNITED STATES CENTENNIAL COMMISSION,  
"STATE OF PENNSYLVANIA,  
"City of Philadelphia, March 10, 1873.

"CALL FOR A MEETING TO ELECT A BOARD OF DIRECTORS FOR THE CENTENNIAL BOARD  
OF FINANCE.

"In accordance with the act of Congress approved June 1, 1872, the United States Centennial Commission hereby issue a call for a meeting of the corporators, and all others who may then have subscribed for stock of the Centennial Board of Finance, to be held in Concert Hall, on the north side of Chestnut street, between Twelfth and Thirteenth streets, in the city of Philadelphia, aforesaid, on the 22d day of April next, at 12 o'clock, noon, for the purpose of electing a board of directors, to consist of twenty-five stockholders, whose term of office shall be one year, and until their successors shall have been qualified, as prescribed in said act.

"At this meeting each subscriber for stock will be entitled to cast one vote in person, or by proxy, for each share of stock thus represented.

"And under Rule 9 the following form of proxy may be used:

"I do hereby authorize and empower ——— for me, and in my name, to vote upon ——— share— of stock in said corporation, held by me, and represented by subscription certificate No. ———, at the meeting of the corporators and subscribers for said stock, called by the United States Centennial Commission, and to be held at Philadelphia, State of Pennsylvania, for the purpose of electing the first board of directors of said corporation.

[Name of subscriber.]  
[Address.]"

[Witness at signing.]

By order of the United States Centennial Commission:

JOSEPH R. HAWLEY,  
*President.*

LEWIS WALN SMITH,  
*Secretary.*

After the reading of which, Mr. Hawley announced that this meeting being now assembled under and pursuant to the said call, the first business will be the nomination and election of a president of the meeting.

Whereupon, Hon. Daniel J. Morrell, the chairman of the Executive Committee of the United States Centennial Commission, nominated Hon. William Bigler, of Clearfield County, Pennsylvania, for president of this meeting.

There being no other nomination, Mr. Bigler was unanimously elected.

He was conducted to the chair by Hon. D. J. Morrell.

Mr. Bigler thereupon addressed the meeting as follows:

GENTLEMEN: I accept with pleasure the position of presiding officer on this occasion, and shall not attempt to disguise the great gratification I feel because of the manifestation of your respect. I am all the more thankful to you because your action brings me in connection with a work so peculiarly in accord with my own feelings. Indeed, I confess to some ambition to be rated an ardent and a working friend of the centennial celebration.

The reasons for this ambition are too numerous to present on this occasion, and I must confine myself to only a few thoughts.

In the first place, I know it to be befitting that the centennial anniversary of the nation's existence should be celebrated in some proper and imposing manner. I can think of nothing more delightful than the coming up of the American people from



every State, and city, and town, and county, and mountain, and valley, and clustering about the birthplace of the nation, and uniting in proper manifestations of joy because of its birth, and because it had existed for a century, and because of the marvelous growth and prosperity that has marked its career.

A still more heart-stirring and christianizing scene will it be to witness the citizens so assembled, uniting their hearts and voices in thankfulness to God for the guardian care He has so constantly manifested over our nation. When that scene is witnessed, God willing, I shall be there.

The story of the declaration of principles enunciated at Independence Hall that added a new member to the family of nations; the marvelous growth of that young member, advancing in the first century of its existence from thirteen to thirty-eight States, some of which, in themselves, have the proportions and resources of great empires—how the increase of its population from three to nearly forty millions; the impression it has already made upon the feelings and sentiments of the old nations—all these are familiar and need not be presented on this occasion.

I have no inclination to vainglorious boasting about our country as compared with others; but one characteristic of America, and, as I believe, her crowning glory, I must be permitted to express, to wit: That the mass of her people, while engaged in their daily and necessary pursuits, enjoy a larger measure of personal comforts and dignity than those of any other nation.

What the forms of the celebration may be, it is not for me to attempt to forecast, but I must be indulged in the expression of the belief that the proposed gathering of the people together from all sections, mingling and commingling together, with their hearts naturally open to the best impressions, cannot fail to have the happiest influence upon the relations existing between the people of the several States. The inevitable tendency will be to beget a higher degree of fraternity and unite the people. It will be a time to forget and forgive, and forever to put away all that is unpleasant in the past.

As for the other branches of the ceremonies—the exposition of the natural and artificial products of the country, and those of all other nations—all this should be done on the grandest scale possible. This will be expected of the American people. Other nations have been giving us useful lessons in this work, and they will expect a striking improvement on those lessons. European nations would not excuse a failure on the plea of youth; but their expectations of our country will be measured by her proportions.

It is right, therefore, gentlemen, that those who have this work in hand should be moved by a fair appreciation of its magnitude, and of the responsibilities that will rest upon them. The result will, in some measure, involve the good name of our country abroad, and to the most sensitive degree will it involve the self-respect and pride of our own people. It has been commenced, and it must be carried through on a scale commensurate with the dignity and resources of our State and nation; and I say shame be to the man or the institution that fails to do a full share to secure its triumphal success.

Hon. Joseph R. Hawley then announced that, pursuant to the said act of Congress, the United States Centennial Commission had nominated for directors one hundred stockholders' from whom twenty-five directors were to be now elected by the stockholders, and that the secretary of the commission would read the names of the gentlemen nominated.

Whereupon, Mr. Lewis Waln Smith, the secretary of the United States Centennial Commission, read the names of the nominees, as follows:

#### FOR DIRECTORS OF THE CENTENNIAL BOARD OF FINANCE.

Alabama—Robert M. Patton.

Arizona—Charles H. Lord.

Arkansas—A. P. Bishop.

California—Jacob Deeth, A. S. Halladie.

Colorado—George W. Chilcott.

Connecticut—Eli Whitney, Henry P. Haven.

Dakota—J. M. Stone.

Delaware—William Canby, Jos. P. Comegys.

District of Columbia—Henry D. Cooke.

Florida—William H. Gleason.

Georgia—J. H. Zeilin, B. C. Yancy.

Idaho—C. W. Moore.

Illinois—J. P. Reynolds, Wirt Dexter, E. D. Sweeney.

Indiana—William H. Levering, J. B. Howe, J. L. Williams

Iowa—Benj. F. Allen, Samuel Murdock.

Kansas—Orrin F. Welch, E. P. Purcell.

Kentucky—Bailie Peyton, Thornton F. Marshall.  
 Louisiana—Thomas C. Anderson.  
 Maine—Joshua L. Chamberlain, A. P. Morrill.  
 Maryland—F. C. Latrobe, Teagle Wallace.  
 Massachusetts—John Cummins, J. Wiley Edmands, William Claflin.  
 Michigan—F. B. Stockbridge, E. O. Grosvenor.  
 Minnesota—D. Morrison.  
 Mississippi—J. A. P. Campbell.  
 Missouri—A. P. Barrett, J. F. Hohenstein, J. L. Stevens.  
 Montana—Granville Stewart.  
 Nebraska—J. P. Redick.  
 Nevada—C. H. Eastman.  
 New Hampshire—George W. Burleigh, Dexter Richards.  
 New Jersey—A. S. Hewitt, B. G. Clark, Charles S. Olden, Thomas H. Whitney.  
 New Mexico—A. P. Sullivan.  
 New York—William H. Appleton, E. D. Morgan, R. Lenox Kennedy, George P. Smith, William B. Duncan.  
 North Carolina—W. W. Ransom, P. F. Pisenl.  
 Ohio—A. D. Bullock, Amos Townsend, P. A. White.  
 Oregon—W. S. Ladd, H. W. Lewis.  
 Philadelphia—William Sellers, John Welsh, Samuel M. Felton, Joseph Patterson, Daniel M. Fox, J. Edgar Thomson, Wm. V. McKean, Joseph Wharton, Edwin H. Fittler, Clement M. Biddle, Thomas Cochran, N. Parker Shortridge, Henry C. Lea, James M. Robb, Edward T. Steel.  
 Pennsylvania—Alex. Bradley, Pittsburgh; Chas. W. Cooper, Allentown.  
 Rhode Island—John Gorham, Ambrose E. Burnside.  
 South Carolina—James D. Treadwell, M. D. L. Stewart.  
 Tennessee—John W. Burton.  
 Texas—W. R. Marshall.  
 Utah—Horace S. Eldridge.  
 Vermont—John N. Baxter, Henry Chase.  
 Virginia—John S. Barbour, Samuel F. Maddox.  
 West Virginia—A. H. Pierrepont, Thomas Swan.  
 Wisconsin—C. C. Washburn, A. E. Elmore, G. Van Stenwyk.  
 Washington Territory—S. Garfield.  
 Wyoming—W. A. Carter.

The president of the meeting then stated that the next business in order was the election of secretaries.

Mr. Lucius P. Thompson, of Philadelphia, moved that Messrs. R. A. Little and Geo. S. Fox be elected the secretaries of the meeting; which was unanimously agreed to.

Mr. Lewis S. Fisk moved that three persons be appointed by the president the judges to conduct the election of directors; which was agreed to.

Mr. M. Richards Muckle moved that two persons be appointed clerks of the election; which was agreed to.

The president then announced that he had appointed Messrs. John O. James, James Long, and G. Morrison Coates the judges, and Messrs. J. Hays Carson and Daniel Sutter the clerks.

Before opening the polls, Mr. Charles Wheeler offered the following resolution:

*Resolved*, That during the periods between the meetings of the stockholders of the Centennial Board of Finance the directors shall have power to fill vacancies that may occur in their own body.

Which was read and unanimously adopted.

On motion a recess was then taken to prepare ballots. On re-assembling the polls were opened, and the stockholders present proceeded to vote for directors pursuant to law.

At 2 minutes past 4 o'clock p. m. the polls were closed.

Mr. W. W. Justice moved that the judges and clerks of the election be authorized to proceed with the ballots, books, and papers to the office of the United States Centennial Commission, No. 904 Walnut street, to count the votes cast; and that they be authorized to certify the result of the election to the president of this meeting, and to deliver to each of the directors elected a certificate of his election, duly signed by the judges and the clerks of the election; which was unanimously agreed to.

On motion the meeting adjourned.

WILLIAM BIGLER,  
*President.*

Attest:

• AMOS R. LITTLE,  
GEORGE S. FOX,  
*Secretaries.*



At the meeting of the stockholders of the Centennial Board of Finance, held April 22 1873, the following-named gentlemen were duly elected directors of the said board of finance for the term of one year, and certificates of election were duly awarded to each of them, signed by the judges and clerks of election, to wit :

Benjamin F. Allen, of Iowa.  
 William H. Appleton, of New York.  
 John S. Barbour, of Virginia.  
 Clement M. Biddle, of Philadelphia.  
 A. D. Bullock, of Ohio.  
 Thomas Cochran, of Philadelphia.  
 Charles W. Cooper, of Allentown, Pa.  
 John Cummins, of Massachusetts.  
 Samuel M. Felton, of Philadelphia.  
 Edwin H. Fitler, of Philadelphia.  
 Daniel M. Fox, of Philadelphia.  
 John Gorham, of Rhode Island.  
 A. S. Hewitt, of New Jersey.

Henry C. Lea, of Philadelphia.  
 William V. McKean, of Philadelphia.  
 Joseph Patterson, of Philadelphia.  
 Robert M. Patton, of Alabama.  
 James M. Robb, of Philadelphia.  
 William Sellers, of Philadelphia.  
 N. Parker Shortridge, of Philadelphia.  
 Edward T. Steel, of Philadelphia.  
 J. Edgar Thomson, of Philadelphia.  
 C. C. Washburn, of Wisconsin.  
 John Welsh, of Philadelphia.  
 Joseph Wharton, of Philadelphia.

---

#### EXHIBIT G.

#### REPORT OF H. D. J. PRATT.

MAY 1, 1873.

SIR : I have the honor to inform you that I have finished the work assigned to me in connection with the preparation of the report of the commission to both Houses of Congress. With the concurrence of the president of the commission and yourself, the copy of the journal of the proceedings of the commission and appendices which accompanied the report to Congress, was classified according to subjects. The volume is accompanied by a table of contents, as well as by an alphabetical index of subjects. Under this arrangement those having occasion to refer to it find all the information relating to any one subject of importance grouped together in a place indicated in the table of contents, and by the headings of the pages, while the alphabetical index refers more minutely to details.

In compliance with your wishes, I have given attention to the subject of general and special regulations for the exhibition, with a view to collecting data which would be useful to the committee in preparing such regulations.

From letters received at this office, and from the remarks of persons of intelligence and respectability, it is manifest that, notwithstanding all that has been done, much remains to be done before the public will be thoroughly informed as to the nature and purposes of the exhibition, its national commemorative character, its dependence for success upon the co-operation and subscriptions of the people, and as to the terms and mode of subscription.

With a view to supplying the demand for this information in a form combining the facts with some of the eloquent and patriotic remarks and thoughts which have been inspired by this projected celebration, and by previous exhibitions of a similar character, I have the honor to suggest the preparation of a pamphlet containing such matter, for wide-spread distribution.

It is not merely the bare facts which the people require, but, in addition thereto, something to associate and identify in their minds the international exhibition with the national glories which it is to commemorate, and of which it is to form a brilliant feature. The press need the suggestion of those considerations which are likely to arouse to enthusiasm the sentiment of nationality in the popular heart in connection with this work. It seems, therefore, desirable and important that the best things said or written on the subject of this and other exhibitions should be incorporated in a permanent pamphlet, subject to enlargement and revision from time to time, and disseminated by every practicable and reliable means throughout the country.

As you are aware, I have draughted, or assisted in draughting, several of the circulars issued from this office.

With reference to the classification of articles for the exhibition, in compliance with the request of Mr. Blake, the chairman of the committee on that subject, I am submitting copies of the latest form of the classification to persons whose professions or pursuits peculiarly qualify them to criticise or suggest amendments to the classification of such groups as are not complete.

I annex a list of the subjects referred to in the last two reports of Hon. W. P. Blake, as executive commissioner, before his departure to report upon the Vienna Exhibition, and extracts from them. The most important parts of one of these reports are pub-

lished in the report to Congress, on the pages specified in the list. Annexed is an abstract of such part of said reports as were not heretofore published.

Respectfully submitted.

H. D. J. PRATT.

Hon. D. J. MORRELL,

*Chairman of the Executive Committee United States Centennial Commission.*

*Subjects referred to in the last two reports of W. P. Blake, as executive commissioner, prior to his departure for Vienna.*

Northern Pacific Railroad. See section 1 of the annexed abstract. Committees of admission (of articles) or advisory committees, see report to Congress, House Mis. Doc. 99, 42d Cong., 3d sess., page 145. State commissions, see report to Congress, page 146. Finances of the Paris Exposition of 1867, see report to Congress, pages 157 to 167. The Vienna Exhibition, see report to Congress, page 185. Engraving the certificate, section 2. Classification, section 3. Necessity for a conservatory, section 4. Prehistoric relics, section 5. Experimental farm, section 6. Custom-house regulations, section 7. Agents of the commission abroad, section 8. Steam-railway to the park, section 9.

## ABSTRACT OF MR. BLAKE'S REPORTS ABOVE REFERRED TO.

### SECTION 1.—NORTHERN PACIFIC RAILROAD.

As chairman of the committee on classification, he had received an interesting communication from the trustees of the Northern Pacific Railroad, proposing to exhibit liberally in the exhibition samples of all the natural productions of the region traversed by that railroad; and had recommended a collective exhibition, embracing a model of their road, such as was exhibited of the Suez Canal at the Paris Exhibition of 1867.

### SECTION 2.—ENGRAVING THE CERTIFICATE.

Conferences have been held, agreeably to the instructions of the executive committee, with the Treasury Department and some of the leading designers of the country. A circular inviting competition had been prepared for the information of designers.

### SECTION 3.—THE CLASSIFICATION.

In accordance with the request of the chairman of the building committee, he, as chairman of committee on classification, had reported progress, and prepared a pamphlet for the guidance of those who may wish to compete for designs for the buildings.

### SECTION 4.—NECESSITY FOR A CONSERVATORY.

Had repeatedly urged the necessity of early making suitable provision for growing exotic plants intended to form a part of the exhibition. Reference is made for those suggestions to his last report to the executive committee, and to schedule of dates, &c. Subject again brought forward by the Pennsylvania Horticultural Society. That honorable and influential body long ago appointed a special committee to confer with the commission in regard to the horticultural department.

They are now impressed with the necessity for early action to provide a suitable building or buildings, in order that the young plants may be placed in them and permitted to develop.

Several buildings will be required to meet the demands of the classification.

In his former reports he omitted to state that soon after his appointment as executive commissioner, he conferred with the Chief of the Department of Agriculture of the United States, and received from him and from Mr. William Saunders, of that Department, the most liberal and gratifying assurances of their desire to co-operate in making the agricultural, horticultural, and floral departments of the exhibition a complete success. Duplicate plants from the propagating houses, and such other contributions as they could properly make are promised.

### SECTION 5.—PREHISTORIC RELICS.

The committee on classification have in view a prominent position for historic and prehistoric relics. Has recently had an offer of co-operation in regard to the prehistoric relics of this country from Dr. Abbot, of New Jersey, who is willing to devote himself to the collection and display of a suitable representation of such articles.



## SECTION 6.—EXPERIMENTAL FARM.

There is also a communication from Mr. Horace J. Smith in regard to the possible use of a farm for the purposes of the agricultural and live-stock departments of the exhibition, to which he invites attention.

## SECTION 7.—CUSTOM-HOUSE REGULATIONS.

Section 6 of the act of Congress requires the commission to report “the requisite custom-house regulations for the introduction, into this country, of the articles from foreign countries intended for exhibition.”

This matter has already received attention from the committee upon tariffs and transportation, and the report on the subject is printed in the Journal, Appendix No. 5.

The Secretary of the Treasury, by a letter to the president of the commission, has already signified his readiness to constitute the exhibition building a bonded warehouse of the United States, whenever it is sufficiently completed for the reception and shelter of articles to be exhibited. It can therefore be announced to foreign governments that articles for the exhibition will be exempt from duties, unless sold in the United States.

## SECTION 8.—AGENTS OF THE COMMISSION ABROAD.

Mr. Blake states that in his preceding report to the commission reference was made to several communications in regard to the establishment of agencies abroad. Further communications on the subject have been received, which have been referred to the executive committee.

## SECTION 9.—STEAM-RAILWAY TO THE PARK.

Upon this subject, Mr. Blake reports that one of the most pressing necessities, in anticipation of the exhibition, is the means of rapid communication by steam-railway between the heart of the city and the site at Fairmount Park. A double-track road will be required. The success of the exhibition, as well as the convenience of the public, demands it. The necessity for such a road, irrespective of the exhibition, is increasing from year to year, in order that the citizens may fully avail themselves of the advantages offered to them by their unequalled park. The location selected for the building is such that a road can be constructed, it is believed, without unusual expense; and there are no insurmountable difficulties in the way of extending it through the city, elevated above the streets, so as not to interfere with existing roads or lines of travel.

The exhibition cannot realize our expectations unless such facilities for rapid access to it are provided and in due season. I deem it my duty to invite the attention of the commission to this subject, at this time, for whatever is done in this direction should be commenced without delay. The road should be completed before the work of construction of the building commences, in order that not only materials, but the workmen, can be transported to the ground without loss of time. The existing lines of horse-railways are inadequate, and even if increased in number and made direct would involve too great a loss of time.

---

[Inclosure 2, in Appendix B.]

## REPORT OF THE SECRETARY.

*To the honorable the United States Centennial Commission:*

When the commission adjourned, in December, the work intrusted to its care was in the earliest stages of organization. Not only had no funds been raised toward defraying the expenses incidental to its prosecution, but there existed a pervading ignorance throughout the country as to the objects in view. It was, therefore, found necessary as part of its duty, to enlighten the public as to its aims, by publications and addresses, as well as to take preparatory steps toward calling into existence the board of finance, and securing subscriptions to the stock.

The work performed by the commission has, therefore, been of a greatly varied character. There have, in fact, been three distinct organizations, all in their incipient stages of formation, and all under its nurture and care. The labors imposed upon it may be divided into—1st. The work of the commission proper; 2d. Work incidental to organizing the board of finance; and 3d. The work of the Citizens' Centennial Finance Committee of Philadelphia.

On the 4th day of November, 1872, the authorities of the city of Philadelphia placed at the disposal of the commission the sum of \$50,000, for the purpose, as set forth in the title of the ordinance of the city making the appropriation, of paying “the current and



incidental expenses of the United States Centennial Commission, and for opening books of subscription in the several States and Territories, and organizing the Centennial Board of Finance."

The practical work of the commission commenced May 29, 1872, and from that time to the present all of its expenses have been drawn from this fund. Thus the expenses which were incurred months before the passage of the ordinance were subsequently paid out of this appropriation. The commission felt that the work done in those early months was absolutely necessary to the success of the enterprise. So essential was it, in the opinion of your officers, that they authorized it even at the risk of becoming personally responsible for payment.

On the 10th of December, 1872, there had been debts contracted to the amount of \$15,478.82. There has been since expended the amount of \$30,859.26, making a total expenditure, up to May 1, 1873, of \$46,338.08, leaving a balance of \$3,661.92 unexpended.

### 1.—THE WORK OF THE COMMISSION PROPER.

The large increase of correspondence has necessitated the employment of several clerks, in addition to the two assistant secretaries, whose time has been constantly occupied in answering the mass of letters received. In addition to this work, the preparation and distribution of numerous subscription-books, notices to agents and commissioners, circular addresses to agricultural, literary, and scientific societies and associations, and to the people, explanatory of the work of the commission and commending it to public attention, had to be undertaken. In order to reach the public through the medium of the pulpit, 15,000 copies of an address to the clergy of the country have been issued and distributed; 10,000 copies of special addresses to the various industrial associations; 10,000 copies to teachers and professors of schools and colleges; and 10,000 to city, State, and national officials; together with 130,000 copies of an address by the executive committee to the people of the United States, were printed and forwarded to the people of every State and Territory.

In addition to these circulars, 13,500 copies of the letter of the chairman of executive committee to the governor of Pennsylvania were circulated throughout this State. These are but illustrations of the character of the labor performed.

Copies of all these circulars have been transmitted with the report of the executive committee; reference to them, therefore, only is made here. The total expense chargeable to the commission proper, from May 29, 1872, to May 1, 1873, amounts to \$24,593.22, a statement of which is hereto appended, marked Exhibit A.

### 2.—CENTENNIAL BOARD OF FINANCE.

The responsibility of initiating the formation and organization of the board of finance being imposed on the commission, large expenses had to be incurred, which are properly chargeable to that body. The preparation and distribution of scrip for stock subscriptions, the appointment and correspondence with agents, and the stimulating of subscriptions, all required expenditure of money and energy. Some idea of the magnitude of the work can be formed from the fact that there were one thousand seven hundred and fourteen agents located in different parts of the country, and that there were printed for distribution to them no less than two hundred thousand scrip subscription blanks, in addition to subscription-books, blanks for making returns, &c. The forwarding of these required a separate clerical force, as well as the entering in the proper record of the names of the various individual subscribers to the stock. The time for the performance of this labor was so brief that the employés were often compelled to work far into the night, as well as during the day, to accomplish the task in time. The amount of the postage-account bears testimony to the extent of the matter prepared for mailing. So great, at times, was the pressure upon the post-office to receive, cancel the stamps, and forward the matter which the commission sent, that, at the request of the postmaster, the mail was divided and sent at specified hours, in order that the immense quantities deposited at one time should not interfere with the regular service.

A statement of all the expenditures on account of the board of finance is hereto appended, marked Exhibit B. The total amount expended on this account is \$13,276.96.

### 3.—CITIZENS' CENTENNIAL FINANCE COMMITTEE.

In January of this year, despite the efforts made to stimulate interest in the centennial celebration, there had been an absence of responses which argued badly for the ultimate success of the cause. The chairman of the executive committee, impressed with the importance of immediate action, instructed me to inform the Citizens' Centennial Finance Committee of Philadelphia that the commission would pay out of its funds all expenses incurred by them in the prosecution of their work. There were two motives which prompted this offer:

1st. The absolute necessity for awakening interest at once in the city of Philadelphia, and thence throughout the country at large.



2d. Because it was thought that as the city of Philadelphia had furnished this money it could not be expended more satisfactorily to the donor than by awakening interest among her own citizens, and by employing her own artisans to perform the necessary work.

Through the energy of the gentlemen connected with the citizens' committee, to whom too much praise cannot be awarded, the work at once began to assume a new phase. Lethargy disappeared, and within sixty days all doubts were dispelled, and success assured. Through the aid of the sub-committees the city was canvassed, and through their correspondents, residing in every part of the State, the great Commonwealth of Pennsylvania was aroused to the necessity of immediate action; while a giant demonstration of the people, at the Academy of Music, in Philadelphia, on the 22d of February, gave assurance to the nation at large that the centennial celebration was thereafter a fixed fact.

In the adoption of these means for popularizing subscriptions to the stock in Philadelphia and Pennsylvania, there has been expended the sum of \$8,467.90.

A classified statement of the objects to which this money has been applied is appended hereto, marked Exhibit C.

#### THE EMPLOYÉS OF THE COMMISSION.

To carry on the various departments briefly alluded to, a large force of employés was necessary.

The printing of the journal of the commission, and of the numerous circulars, addresses, blanks, &c., was, as far as practicable, given to the lowest bidders, upon proposals inviting bids sent to a number of the leading printers of this city. The advertising outside of the city was done by a liberal agency, who deducted from the bills rendered the commissions to which they were entitled. Thus, both the printing and advertising were procured at the lowest rates.

All bills contracted by the commission have been paid by warrants drawn by the mayor of the city, each bill requiring, before payment was made, not only his approval but also the approval of the city comptroller; and the payment of each was made by the city treasurer, upon such warrant, to the person to whom the amount was due. Thus, no portion of the city funds passed into the hands of the commission, or any of its officers, for disbursement.

Vouchers, showing to what purpose each item of expense was applied, together with the receipted bills, are on file in the office, and I would ask that the accounts be referred to the finance committee, or such other committee as may be proper, to be examined and audited.

#### CONCLUSION.

Taking into consideration the fact that the work in which we were engaged was entirely novel; that there were no precedents to serve as guides; that the time was so short as to make speed of more importance than money itself, and that the materials had to be both created and applied as the work progressed, it is believed that the results accomplished bear testimony to the economy and discretion exercised in the work. Through the energies of those who have volunteered in the work, and with the expenditure of a little over thirty thousand dollars since the adjournment in December, there has been secured to the cause more than three millions of dollars. General public interest has taken the place of indifference. The newspaper press, that powerful instrument for conveying information, has already, in every section, commenced the task of instruction. The aims for which we strive are no longer known only to those with whom we come in personal contact. All parts of our country are becoming parties in interest in our great undertaking, while more distant lands are inquiring as to our purposes.

With these fruits, garnered by the active labor of five months, with imperfect organization, contracted means, and the existence of jealous distrust of our ultimate success, how much greater things can we prophecy for the coming months, now that success is assured, and the preparatory work of organization completed.

Respectfully submitted.

LEWIS WALN SMITH,  
*Temporary Secretary.*

#### EXHIBIT A.

##### *Expenses of the commission proper.*

Furniture, carpets, &c . . . . .	\$2,878 80
Paper-hanging and repairs . . . . .	370 36
Hotel expenses . . . . .	845 43
Traveling and incidental expenses . . . . .	607 08

National seal.....	\$240 00
Special agent to Vienna.....	500 00
Flag.....	33 00
Telegraphing.....	459 52
Advertising.....	24 50
Postage.....	863 48
Photographing.....	18 50
Safe.....	45 00
Rent, fuel, and gas.....	726 53
Stationery.....	972 66
Salaries.....	11,452 66
Library.....	155 68
Subscriptions to newspapers.....	390 20
Printing.....	4,000 82
	<hr/>
	24,593 22

## EXHIBIT B.

*Expenses chargeable to the board of finance.*

Salaries.....	\$7,963 59
Stationery.....	99 00
Printing.....	3,297 87
Rent of Concert Hall.....	75 00
Advertising.....	1,115 97
Rent, fuel, and gas.....	725 53
	<hr/>
	13,276 96

## EXHIBIT C.

*Expenses of the citizens' committee.*

Postage.....	\$1,420 18
Stationery.....	82 23
Printing.....	2,390 97
Advertising.....	3,624 37
Mass meeting.....	950 15
	<hr/>
	8,467 90

[Inclosure 3, in Appendix B.]

## APPENDIX NO. 3.

## REPORT OF COMMITTEE ON PLANS AND ARCHITECTURE.

*To the United States Centennial Commission :*

GENTLEMEN : At the May session of the commission your committee on plans and architecture was instructed "to confer with the authorities of the city of Philadelphia and the commissioners of Fairmount Park, and to fix the place upon which the exposition building is to be erected." After several interviews with the authorities of the city, and especially with the commissioners of Fairmount Park, who have immediate control of the grounds of the park, a formal application was made for the transfer to the Centennial Commission of that part of the park selected for the uses of the exhibition. Accordingly, the transfer was made and accepted on behalf of the commission. Copies of the documents referring to the transfer are submitted with this report.

To secure the best architectural effect, and for a proper classification of the articles on exhibition, the topography of the ground selected naturally suggests the erection of more than one building, viz : A main building, including the memorial-building, an art-gallery, a machinery-hall, and conservatory, covering together about fifty acres of floor-space ; the first to be erected on Lansdowne Plateau, the second on the east, and the third on the west of the main building.

As the main building should be the chief architectural feature of the system of



buildings, and as it will require a greater time in construction, designs have been solicited for this building and art-gallery, with the view of securing plans at the earliest day possible,

On the 25th day of February, 1872, the following resolution was adopted by the executive committee :

*Resolved*, That, in the judgment of this committee, the necessary funds are provided for the construction of the centennial buildings, and that the committee on plans and architecture is hereby authorized and requested to proceed at once to procure such plans as may be deemed suitable for the purposes of the exposition, for the approval of the commission.

With this information, in accordance with your instructions, specifications for preliminary designs for the main building and art-gallery have been prepared, and architects and others invited to submit sketches of plans under an unlimited public competition.

The 15th day of July has been named as the date for the reception of the primary designs. The time may be too limited for a thorough and intelligent consideration of the classification, &c., for the proper construction and adaptation of so vast a system of buildings for the purposes intended, but the urgency for prompt and decisive action is great, and admits of no delay.

The want of sufficient time in which to erect the buildings being so apparent, it is hoped that architects and others intending to compete will realize the importance of an early decision, and that on the date fixed designs will be submitted from which a plan may finally be selected and adopted.

The foundations of the principal buildings should be completed this fall, otherwise it is feared that the experience of former international exhibitions may be repeated, which would seriously embarrass and injure the enterprise.

A. T. GOSHORN,  
W. H. PARSONS,  
ORESTES CLEVELAND,  
E. A. STRAW,  
DAVID ATWOOD,  
GEO. A. BATCHELDER,  
M. GOLDSMITH,

*Committee on Plans and Architecture.*

OFFICE OF THE CHIEF ENGINEER AND SURVEYOR,  
224 South Fifth Street, Philadelphia, April 5, 1873.

DEAR SIR: Your communication, addressed to Hon. Morton McMichael, president of Fairmount Park Commission, requesting that body to appropriate the grounds for the Centennial Exposition of 1876, has been received and referred to the park centennial committee.

At a meeting of that committee, held this day, the following resolution was adopted :

*Resolved*, That the chairman of this committee is requested to offer to Mr. Goshorn, chairman of the committee of plans and architecture of the centennial exposition, the plots of ground respectively marked on the maps hereto annexed A, B, C, D, E, and F for the erection of the various structures for the use of the centennial exposition of 1876: *Provided, however*, That the control and supervision of such part of the ground so appropriated as may not be required for the uses and purposes of the exposition shall continue and remain in the park commission.

I beg you to examine the resolution and plan, and if the plan meets your approval it will be reported to the park commission for their action on Saturday, the 12th instant.

Very truly,

SAMUEL L. SMEDLEY.

*Acting Chairman Committee on Centennial Exposition,  
Fairmount Park Commission.*

Hon. A. T. GOSHORN,

*Chairman Committee on Plans and Architecture, Centennial Exposition.*

CINCINNATI, April 8, 1873.

DEAR SIR: I am in receipt of yours of 5th instant, with accompanying map, advising me of the action of the commissioners of Fairmount Park on my communication referring to the ground to be appropriated to the use of the Centennial Commission. The plots of ground designated on the map, A, B, C, D, E, and F, offered by your commission for the erection of the centennial-exhibition buildings, are most favorably located and sufficient in extent for the purposes of the great enterprise.

In so far as I can, in the absence of the Centennial Commission, I approve of the action of your commission, and accept the plot of ground on the terms stated in your communication.

I am, very respectfully,

A. T. GOSHORN,

*Chairman Committee on Plans and Architecture, Centennial Commission.*

SAMUEL L. SMEDLEY,

*Acting Chairman Committee on Centennial Exhibition,*

*Fairmount Park Commission, Philadelphia.*

PHILADELPHIA, *March 27, 1873.*

DEAR SIR: The committee on plans and architecture of the United States Centennial Commission desire you to designate the location, and appropriate the grounds in the park for the use of the United States International Exhibition of 1876. The spaces for the main building and the art-gallery, on Elm avenue, are required at once for the use of architects furnishing designs.

In order that the grounds may be adapted for the purposes of the exhibition, and that the additional grounds which may be required may be designated as early as possible, we desire the park commissioners to co-operate with this committee in arranging the grounds for the purposes of the exhibition, with the view that the walks and drives laid out for exhibition purposes shall remain as permanent features of the park after the exhibition closes, as commemorative of the great event.

Very respectfully,

A. T. GOSHORN,

*Chairman of Committee on Plans and Architecture.*

HON. MORTON MCMICHAEL,

*President of the Park Commission.*

OFFICE OF THE UNITED STATES CENTENNIAL COMMISSION,

*904 Walnut Street, Philadelphia, April 1, 1873.*

*Specifications for plans for the centennial-anniversary buildings to be erected in Philadelphia for the International Exhibition in 1876.*

The entire buildings connected with the exhibition will cover at least fifty acres of ground, and will be located in Fairmount Park.

This communication refers only to the main exhibition building and to the art-gallery, the latter being a building separate and distinct from the former.

1st. The main building will be located upon the site marked A, on the topographical map furnished by the Centennial Commission, and excluding such open courts and areas as the nature of the various designs may require, but including the galleries, should cover at least twenty-five acres of floor-space.

A portion of this main building will form the memorial-hall, and must be a complete building within itself. It must be of such a character, and constructed of such substantial materials, as that it shall remain after the close of the exhibition for a permanent art-museum.

The memorial-building will cover not to exceed five acres of floor-space. The remaining portion of the main building will be removed after the close of the exhibition, and must be planned accordingly.

The entire main building must be designed so as to afford an opportunity for the best allotment of space, with a view to a comprehensive and effective arrangement of articles in accordance with the classification adopted by the Centennial Commission.

In the published statement, giving the classifications adopted by the commission, those "groups" marked A are intended to be placed in the main building; the other groups will not require consideration in connection with this building.

2d. The art-gallery will be located upon the site marked B, on the map furnished by the Centennial Commission, and, excluding open areas, if the nature of the design requires them, should cover not to exceed two acres of floor-space. This building must be of such substantial materials and sufficiently fire-proof as to thoroughly protect the valuable articles to be placed in it. It must be well adapted to contain and properly exhibit the various articles mentioned in the "groups" marked B in the classification adopted by the commission.

In designing both the above buildings, special care must be taken to insure ample



strength to sustain safely the great weights and moving crowds that they may contain. At the same time, they must be able to effectually resist the action of the severest winds, and afford complete protection to their contents from the weather, without becoming expensive in construction.

The committee on plans and architecture has prepared for distribution a map showing the sites of the proposed buildings, and a statement, giving the classification adopted by the commission. Those interested can obtain copies by applying to the secretary of the commission, at 904 Walnut street, Philadelphia.

Architects, engineers, and others are hereby invited to offer *preliminary sketches of designs* for each of the above buildings, *for the first and unlimited competition*.

Designs offered for each building must be represented by the following drawings, and conform strictly to the following requirements; none others will be considered: No. 1. The block plan. No. 2. The ground plan. No. 3. The gallery plan. No. 4. The north elevation. No. 5. The south elevation. No. 6. The transverse sections necessary to properly illustrate the design.

Drawing No. 1 must be made to the scale of 100 feet to an inch, and must show both buildings in their proposed relative positions to each other. Separate drawings, to the scale of 64 feet to an inch, for Nos. 2, 3, 4, 5, 6, will be required for each building.

All the drawings must be in pencil, India ink, or sepia, with the shadows cast, and no color shall be used, except upon the block plan and plans of the floors.

Each design shall be accompanied by a clear and condensed written description of the drawings, and the proposed material of construction, under seal, and a sealed letter giving the address of the author. The name of the party offering the design must not appear on the drawings, or be attached to the description. All plans must be placed in the hands of the secretary of the commission, at Philadelphia, before noon on the 15th day of July, 1873, after which time no designs will be received.

As the designs submitted are received, the date of their reception will be indorsed upon them, and, together with the description and sealed letter giving the address of the architect, will be numbered; the designs, descriptions, and address will each bear the same number. Thus numbered, they will remain in the possession of the secretary until opened by the committee on plans and architecture.

From these preliminary sketches of designs, submitted as above indicated for this first competition, there will be selected ten designs, (if there be found that number sufficiently meritorious to be admitted to the second competition,) to each of which shall be paid the sum of \$1,000.

The letters giving the addresses will be opened after judgment has been pronounced by the committee, and the authors of each of the ten designs will be notified of their designs having been selected for the second competition; the others will be returned to the parties submitting them.

The second competition, for the final adoption of a plan, shall be limited to the designs selected under the first public competition, in accordance with the provisions herein specified.

The conditions, requirements, awards, &c., for the second competition will be announced *at or prior to* the close of the first competition.

Persons intending to compete for the plans should file their address with the secretary of the commission, so that further announcements may be promptly communicated to them.

ALFRED T. GOSHORN, *Ohio*,  
WM. HENRY PARSONS, *Texas*,  
ORESTES CLEVELAND, *New Jersey*,  
DAVID ATWOOD, *Wisconsin*,  
EZEKIEL A. STRAW, *New Hampshire*,  
GEO. ALEXANDER BATCHELDER, *Dakota*,  
MIDDLETON GOLDSMITH, *Vermont*.  
*Committee on Plans and Architecture.*

---

[Inclosure 4 in Appendix B.]

#### REPORT OF COMMITTEE ON BY-LAWS.

The special committee, appointed at the December session, to consider any changes or additions to the by-laws, beg leave to submit the following report for the consideration of the commission:

*Official title.*—This body shall be known as "The United States Centennial Commission," as provided for by the act of Congress approved March 3, 1871, and the celebration for the conduct of which the commission is appointed shall be known as "The International Exhibition of 1876."

S. Ex. 30——7



For the transaction of business a majority of the members of this commission shall be a quorum, and have power for the conducting and the making all needful rules and regulations for its government, in providing for the celebration of the one hundredth anniversary of American Independence, as provided by the acts of Congress.

The officers of the commission shall be a president, five vice-presidents, a secretary; shall be elected at the present session of this commission, from the commissioners attending, (the session;) also a treasurer, a counsellor, and solicitor, who shall severally hold their respective offices for the term of one year, and until their respective successors are duly elected and qualified to act.

The commission may from time to time create other offices, and shall elect the officers, who, when elected, shall serve as such during the pleasure of the commission, or such term of time as the commission shall designate at the time of creating such office.

Election shall be by ballot, and be held during the annual session of the commission in May, on such day of the session as the commission shall, during its session, designate, notice of which shall be given in open session at least one day preceding the holding the election; in case of failure to elect at the time specified, the officers then serving shall continue until their successors are elected and qualified to act.

The president shall preside at all meetings of the commission; shall have all the authority and power of the presiding officer of a legislative body; shall appoint all committees, (except the executive committee,) unless otherwise ordered; shall call special meetings of the commission on his own motion, or on the request of the executive committee, or at the request, in writing, of at least thirteen commissioners, of which meetings not less than thirty days' notice shall be given to each member by mail or telegraph; he shall be exempt from serving on all committees.

The vice-presidents shall, in the absence of the president, perform his duties, each taking precedence in accordance with the time of his election, or by drawing lots for precedence when elected.

The executive committee, when duly convened, nine members shall constitute a quorum for business; seven members shall be a majority. It shall elect its own chairman, appoint its own clerk, and such other agents and employés as it shall deem necessary, and define their duties.

The committee shall cause to be kept a journal of all its proceedings, transactions, and votes; shall have power to make such rules and regulations for its own government as it may deem proper; shall act immediately on all matters referred to it by the commission, and make report thereon to the commission when in open session; shall have, during the recess of the commission, all the executive and administrative authority of this commission which can be delegated to such committee, in preparing for the conducting, regulating, and managing the exhibition to be held in 1876. All which proceedings, transactions, rulings, and journal shall be reported fully to the commission at the commencement of each session; also, when requested so to do by the commission for its inspection and approval.

The rulings of the commission on any subject connected with said exhibition shall be followed and carried out by the executive committee, and all acts and transactions of said committee shall be subject to review and approval by the commission, as provided by acts of Congress of March 3, 1871, and June, 1872.

The papers, books, and journal of its proceedings shall, at all times, be subject to examination by the commission or any member of the commission.

A member of the executive committee shall not be appointed on any other committee.

In case of a vacancy happening during the recess of the commission, the president shall appoint a commissioner to fill the vacancy, who shall hold his office until action shall be taken on it by the commission, or until his successor is elected.

The standing and other committees shall report to the executive committee, when so requested, (provided that it is not during the session of the commission,) the progress of the work of such committee.

The president of the executive committee is authorized to refer to any committee such matters as may come before it, and which should appropriately have been, or ought to be, referred to a committee during the recess of the commission.

The president shall not be a member of any committee except the executive committee.

In all cases where an alternate commissioner attends the session, (and the commissioner does not,) and the commissioner is appointed on a committee, the alternate shall assume and perform the duties of such commissioner as may be unable to attend the meeting of the committee until such commissioner attends.

The treasurer, before entering upon the duties of his office, shall execute a bond in such penalty as may be directed by the commission or executive committee, with two or more sureties, payable "to the United States Centennial Commission," conditioned for the faithful performance of his duties as such treasurer, and abide by all orders and resolutions of said commission in regard to his duties.



He shall also take an oath before an officer qualified to administer oaths and affirmations, that he will well and faithfully perform his duties as treasurer of the United States Centennial Commission, and file the same in writing, also the said bond, with the president of the commission, the bond and sureties being first approved by the commission or executive committee.

The treasurer shall report to the secretary of the commission, within thirty-six hours after receiving any money or funds of the commission, the amount received, and the source from which it is derived, with which the secretary shall charge the treasurer.

The treasurer shall deposit all moneys received by him in such depository as may be designated by the commission within thirty-six hours after receiving the same, and only draw such amount therefrom on proper checks or warrants authorized by the commission.

He shall keep accurate accounts of all receipts and expenditures, and shall report the same in detail monthly to the executive committee, and also at the beginning of each session of the commission to it.

His books of accounts and vouchers shall, at all times, be open to inspection by any member of the commission.

No money shall be drawn from the treasury of the commission unless an appropriation is expressly made by the commission and ordered to be paid, or on accounts, bills, claims, &c., &c., approved by the auditing committee, reported to and approved by the commission, or for salaries (monthly) of the officers, agents, and employés of the commission.

In all cases checks or warrants shall be issued, stating in substance the consideration and for what purpose the money is for, signed by the president and countersigned by the secretary, and the stubs shall be re-bound by the secretary.

#### DUTIES OF THE SECRETARY.

He shall attend all meetings of the commission, keep correct minutes of all proceedings and transactions of each meeting, and enter on the journal all motions made, with the name of the member making and seconding it; shall receive, indorse, and file all papers and documents, &c., &c., relative to the business of the commission, and preserve the same; shall regularly attend at the office of the commission in the city of Philadelphia, and have full charge and control thereof, subject to the rules and orders of the commission; also keep the accounts of all officers, agents, and employés, and shall generally perform such duties as are usually performed by the secretary of a legislative body; shall conduct the correspondence under the direction of the president.

At the opening of each daily session of the commission, the secretary shall present a list of all unfinished business of the prior session of the commission.

All papers, documents, and books in the possession of the secretary shall be open at all times to the inspection of any member of the commission.

To aid the secretary in the discharge of the duties of his office, he shall have an assistant secretary and a recording secretary, and such clerks and employés as the commission deem necessary, to be nominated by him and appointed by the commission, who shall, at times, perform such duties as the secretary shall assign to them, and serve during the pleasure of the commission.

An executive committee, to consist of thirteen members, shall be elected at the present session of the commission, from the commissioners attending, who shall hold their offices one year, or during the pleasure of the commission, and until their successors are elected.

There shall be appointed at each annual meeting (after the election of officers) the following-named committees, who shall serve for the ensuing year, and until their successors are appointed:

1. A Committee on Finance.
2. A Committee on Plans and Architecture.
3. A Committee on Fares and Transportation.
4. A Committee on Auditing Accounts.
5. A Committee on Classification.
6. A Committee on Foreign Affairs.
7. A Committee on Domestic Affairs.
8. A Committee on Opening Services.
9. A Committee on Printing.

Each committee shall consist of seven commissioners. Each committee shall elect its own chairman, and report it to the secretary.

No person shall be elected to an office unless he is a commissioner and then in attendance at the commission.

#### ORDER OF BUSINESS.

The president shall take his seat at the hour appointed for the meeting of the commission. In case he is absent at the time, the vice-presidents (in their order) shall preside until the president is present.

1st. The roll of the members shall be called, and those present and absent shall be noted. The roll shall be called by States.

2d. The journal of the previous meeting shall be read, and if necessary amended or corrected, and be approved.

3d. Reports of committees: 1st. Standing committees; 2d. Select committees; 3d. Original resolutions.

4th. Miscellaneous business.

5th. Unfinished business taken up.

Members speaking shall address the president, and when presenting a paper shall state its import.

When a motion is made and seconded the question shall be stated by the president, and if in writing shall be read before debate. Every motion shall be reduced to writing, if the president or a member request it.

The auditing committee shall make full inquiry and examination into and of all bills, accounts, and claims; also examine into all such matters and things as may be referred to it by the commission, and make report of their decision on the same, which, if approved by the commission, (if the matter is for the payment of money,) an order shall be drawn on the treasurer for the amount so ordered.

The printing committee shall have in charge all matters referred to it and ordered to be printed, and of making a disposition of such other matter as it may deem proper to be printed.

It shall make all contracts for printing for the commission, and report its proceedings to the commission, or when called on for its approval.

No printing shall be done unless ordered by the commission, the printing committee, or the executive committee.

#### DUTIES OF COUNSELOR AND SOLICITOR.

He shall attend the meetings of the commission and the meetings of any of the standing committees, when requested so to do, and give legal advice on all questions submitted by said committees, or either of them, and draw all contracts and documents designated by this commission, or either of said committees.

He shall be entitled to a seat on the floor during the session, and give legal advice on any question submitted to him by the commission, and such other duties as may be prescribed by the commission, and shall hold his office during the pleasure of the commission.

A motion may be withdrawn by any member making it.

No member shall occupy the floor in debate longer than ten minutes, unless by unanimous consent of the members present, nor shall any member speak more than twice on any subject before the commission.

The rules of parliamentary law as laid down in ——— Manual, shall be the rules governing the deliberations of this commission, except when they conflict with the provisions of these by-laws.

All by-laws heretofore adopted and now in force, are hereby repealed. Also, the resolutions which are in conflict with the by-laws now adopted are repealed and made null and void.

These by-laws may be altered or amended at any annual meeting of the commission by a vote of two-thirds of the members then present.

#### BOARD OF DIRECTION.

The board of direction shall consist of nine members of this commission, seven of whom shall be nominated by the President, and elected by a viva voce vote of the commission, and two shall be members ex-officio, viz: The chairman of the committee on plans and architecture, and the chairman of the committee on finance. Four members of the board of direction duly convened shall constitute a quorum, and the board shall report its transactions to the commission at each of its stated meetings. The board shall have power to make such regulations for the transaction of its business as it may, from time to time, deem proper. It may elect such officers and agents as it deems necessary, define their duties, and fix their compensation. In the recess of the commission the board shall have all the power of the commission which can be delegated to that body. In case of a vacancy in the board during the recess of the commission, the same shall be filled by the president until action shall be taken thereon by the commission.

#### DUTIES OF THE PRESIDENT.

The president of the commission shall reside in Philadelphia, and give his time and attention to the business of the commission and in aid of the operations of the board



of finance, and for which he shall receive an annual salary, to be fixed by the board of directors. He will preside at all meetings of the commission, and appoint all committees, unless otherwise ordered. He shall, at the request of the board of direction, or of any ten members of the commission, when made to him in writing, call a special meeting of the commission, giving not less than thirty days' notice to each member. He shall be ex-officio chairman of the board of directors, and a member of all standing committees.

WILLIAM F. PROSSER,  
ROBERT LOWRY,  
JOHN DUNBAR CREIGH,  
OSCAR G. SAWYER,  
JOHN H. RODNEY,  
*Committee on By-Laws.*

---

![[Inclosure 5 in Appendix B.]

### REPORT OF THE COMMITTEE ON CONFERENCE.

PHILADELPHIA, *May 3, 1873.*

*To the Executive Committee of the United States Centennial Commission and the Board of Directors of the Centennial Board of Finance:*

GENTLEMEN: The committee on conference appointed by the executive committee of the United States Centennial Commission and the directors of the board of finance, to define the relative duties and rights of the commission and the board, held a meeting, at which there was a full interchange of opinion, and would respectfully report:

That an examination of the acts of Congress approved March 3, 1871, and June 1, 1872, discloses the fact that the powers and duties of the two bodies seem somewhat to intermingle, and no doubt will require, in many instances, more consideration to arrive at proper and legal conclusions than the limited time assigned us to report will permit. Under the circumstances, we are of the opinion that the great essential of success is, that harmony should exist between the two corporations, and that there should, in all matters, be that full and free conference which will promote the common end. So far as the work which lies immediately before us is concerned, and which is apparent on the face of the act, the committee have united on the following construction of the acts:

1st. That the right to originate and adopt a plan for the buildings belongs to the commission; but, inasmuch as the board have to provide the necessary funds for erecting the same, and are charged with their erection, the estimate of the cost of the buildings should be submitted to the board for approval before final adoption by the commission.

2d. The power to fix and establish entrance and admission fees is vested in the commission; but, as these are the chief sources of revenue of the board, this power on the part of the commission should be carefully exercised, with a due regard to the promotion of the financial success of the enterprise.

3d. The board of finance to submit to the commission a design for a certificate of stock for approval.

4th. That the power is vested in the commission to make all rules affecting the rights or interests of the exhibitors; but, before final adoption, there should be a full consultation with the board of finance.

5th. The awarding of premiums and the appointment of judges and examiners are vested in the commission; but it is recommended that, before the cost of the premiums be definitely settled, the same shall be made to conform, as nearly as possible, to the views of the board of finance.

The general rule which has governed the committee, and which they recommend be the one adopted for the future, in determining with whom the duty and power vest, is, that all matters concerning revenue and the expenditure thereof ought to be primarily under the direction of the board of finance, and that all other matters appertaining to the national character or success of the exhibition should be within the special control of the commission. By referring all doubtful points to this rule, and exercising a mutual spirit of harmony, it is believed that any dissension may be avoided.

Respectfully submitted.

LEWIS WALN SMITH,  
JOHN L. SHOEMAKER,  
THOMAS COCHRAN,  
DANIEL M. FOX,  
*Committee on Conference.*

[Inclosure 6 in Appendix B.]

## ALPHABETICAL INDEX TO JOURNAL OF PROCEEDINGS OF UNITED STATES CENTENNIAL COMMISSION.—THIRD SESSION.

	Page.
A.	
Abbot, Dr., of New Jersey, offers to co-operate in securing collection of pre-his- toric relics for the exhibition .....	90
Address by the Hon. Daniel M. Fox .....	39
William Henry Parsons .....	39
Mr. Joseph Patterson .....	40
A. J. Dufur .....	40
Mr. H. Ewing .....	40
E. A. Straw .....	40
Mr. J. Edgar Thomson .....	40
Mr. William V. McKean .....	40
the Hon. Samuel J. Randall .....	41
J. R. Hawley .....	27, 38, 55
the Hon. James G. Blaine .....	29
Mr. John Welsh .....	38
the Hon. William Bigler .....	38, 86
Addresses to the people, form of .....	69, 77
resolution to issue .....	66
issued .....	69
Agencies of the commission abroad, communication relative to .....	56, 91
Agents to Vienna, report of, referred to executive committee .....	63
circular to .....	69
Agricultural department of the exhibition, conferences relative to .....	90
communication relative to .....	90
Alternate commissioner, powers of .....	59
Amendments to by-laws .....	61
to rules relating to board of finance .....	69
American Medical Association, action relative to co-operation of .....	44
Annual meetings provided for .....	61
Appropriation made by city of Philadelphia; manner of its disbursement .....	93
care exercised in expending .....	71
Architects invited to offer sketches of designs .....	97
Architecture. (See Committee on plans and architecture)	
Art-gallery, proposed position of .....	94
B.	
Bigler, the Hon. William, address by .....	38, 86
elected president of stockholders' meeting .....	86
Blaine, the Hon. James G., address of .....	29
courtesies extended to .....	29
Blake, William P., report of, as special agent .....	29
report of, referred to executive committee .....	30, 63
resolution instructing executive committee relative to report of .....	30
resolution of thanks to .....	58
abstracts of reports of, as executive commissioner .....	90
sent to Vienna as special agent .....	69
Board of finance. (See Centennial Board of Finance.)	
Board of State supervisors of Pennsylvania invited to meet the commission .....	35
report of committee appointed to wait on .....	36
By-laws, report of committee on .....	31, 59, 97
adoption of .....	62
amendments to .....	61
consideration of, suspended .....	42
consideration of, resumed .....	50, 53
action relative to .....	53
C.	
Centennial Board of Finance, meeting of stockholders of .....	29
election of board of directors .....	29
expenses of organizing .....	29, 92, 94
courtesies extended to .....	30, 35
invited to meet the commission .....	35



	Page.
Centennial Board of Finance, report of committee appointed to wait on .....	35
notice of organization of directors .....	34, 70, 86
officers of .....	34
conference of, with the commission and State super- visors .....	38
resolution of thanks to .....	62
communication from, concerning relative rights and duties of the board and the commission .....	67
amendment of rules relating to .....	69
its character and powers .....	70
address of the Hon. William Bigler at organization of .....	86
directors authorized to fill vacancies in their own body .....	88
election of directors .....	89
relative powers and duties of commission and the directors of .....	101
Certificate of stock, action relative to .....	90
designs for, invited .....	69
Certificate of subscription, form of .....	76
China, executive committee requested to take measures to secure representation of the industries, &c., of, at the exhibition .....	62
Citizens' committee, expenses of .....	91, 94
Classification, changes in notation of .....	30
(See Committee on.)	
committee on, communication relative to article for exhibition referred to. ....	35
form of, submitted to persons eminent in various professions .....	89
resolutions concerning .....	58
Clergy and religious associations, address to .....	69, 78
Commemorative medal, action relative to .....	34
Commercial organizations, address to .....	69, 82
Commissioners requested to furnish information to secretary .....	58
duties of, within their respective States .....	71
Committee. (See Special committee, executive committee, committee on, &c.)	
of three appointed to wait on the directors of board of finance and State supervisors of Pennsylvania .....	35
report of committee of three .....	35
of five appointed to attend convention of governors .....	67
on arts and sciences, resolution of instruction to .....	64
on by-laws, report of .....	31
on plans and architecture, resolution relative to report of .....	31
on plans and architecture, adoption of report of .....	31
on by-laws, consideration of report of .....	46, 50, 53
report of .....	97
on classification, report of .....	30
communication, relative to articles for exhibition .....	35
resolution of instruction to .....	53
on credentials, report of .....	28, 36
instructed to report on claim of F. C. Johnson to a seat. action relative to report of .....	29
consideration of report of .....	35
on fisheries and fish-culture, appointed .....	42
on history and literature, resolution referred to .....	62
on horticulture, appointed .....	58
made a standing committee .....	65
on legislation, resolution relative to a commemorative medal referred to .....	66
on nomination of secretaries of divisions, by-law relative to .....	34
on plans and architecture, report of .....	61
correspondence of, with commissioners of Fairmount Park .....	29, 94
on tariffs and transportation requested to arrange extra facilities of travel, &c., during the exhibition .....	95
Committees of the commission, list of .....	58
number of members of .....	54, 64, 66
list of officers of .....	54
Communication from H. R. Linderman, Director of United States Mints .....	66
from Women's Centennial Executive Committee .....	34
	45

	Page.
Communication, action relative to.....	45
relative to appointment of a special agent at London.....	35
relative to a machine for manufacture of wool.....	35
from secretary of state of New Hampshire.....	57
from Woman's Association.....	57
relative to establishment of agencies abroad.....	91
from John L. Shoemaker.....	63
from board of finance.....	67
Competition for plans invited.....	96
Conference of the commission, board of finance, and board of supervisors.....	38
Conference committee, report of.....	31, 101
Congress, duty of, in connection with the exhibition.....	71
Conservatory, necessity for, in the exhibition.....	90
situation of.....	94
Convention of governors, committee appointed to attend.....	67
Credentials, report of committee on.....	18
of F. C. Johnson referred to committee.....	29
of F. C. Johnson considered.....	42
Custom-house regulations, action relative to.....	91
D.	
Deceased commissioners, information concerning, to be obtained by secretary...	58
Designs for certificate of stock invited.....	69
circular relative to.....	83
Director-general, by-law providing for.....	60
powers and duties of.....	60
election of A. T. Goshorn.....	67
election of, unanimously confirmed.....	67
Directors of board of finance chosen.....	70, 89
resolution of thanks to.....	62
communication from.....	67
authorized to fill vacancies in their own body.....	88
relative to powers and duties of, and the commission.....	101
(See Centennial Board of Finance.)	
E.	
Election of directors of board of finance.....	88
of officers.....	55
of executive committee.....	56
Employés of the commission.....	93
Engineers and architects invited to offer sketches of designs for exhibition build- ings.....	97
Ewing, M. H., remarks at conference meeting.....	40
Executive commissioner, resolution of thanks to.....	59
resolution providing for, repealed.....	58
abstract of reports of.....	90
sent to Vienna as special agent.....	69
report of, completed by Mr. Pratt.....	69
Executive committee, conference committee of, with committee of directors of the board of finance.....	101
amendment of the report of.....	34
resolution of instruction in relation to report of Wm. P. Blake.....	30
instructed to issue a circular to exhibitors for estimates of space.....	65
report of agent to Vienna, referred to.....	63
election of.....	56
requested to seen rerepresentation of China, Japan, and other oriental countries.....	62
by-law relative to.....	59
powers and duties of.....	59
B. H. Haines elected secretary of.....	67
visit Harrisburgh to secure State appropriation.....	68
meet the Pennsylvania legislature.....	68
return thanks to Governor Hartranft.....	68
conference of, with representatives of the press.....	68
officially recognize women's committee.....	70
recommend formation of similar organizations in other States.....	70



	Page.
Executive committee, send special agents to Vienna .....	69
report of .....	28, 68
mass-meeting in Philadelphia, under auspices of .....	68
Expenses of the commission .....	29, 71, 92
of the citizens' committee .....	91, 94
of organizing Centennial Board of Finance .....	29, 92, 94
Experimental farm, communication relative to .....	91

## F.

Fairmount Park, invitation to visit .....	55
Floral department, conferences relative to .....	90
Foote, Henry S., resolution of thanks to .....	64
Fox, the Hon. Daniel M., remarks of, at conference meeting .....	39

## G.

General Government, address to officers of .....	69, 81
Goshorn, Alfred T., elected director-general .....	67
election of, unanimously confirmed .....	67
Governor of Pennsylvania, letter to .....	69, 72
Government of the United States, address to officers of .....	69, 81
Governments of the several States, circular to .....	81

## H.

Haines, B. H., elected secretary of executive committee .....	67
Hartranft, Gov. John F., thanks to .....	68
Hawley, the Hon. Joseph R., address by, elected president of the commission .....	27, 55
History of the progress made by the United States during the last century, communication relative to .....	35
History and literature, communication relative to. (See Committee on horticultural department.) .....	90
Horticulture. (See Committee on.) .....	
Hough, Franklin B., communication from .....	35

## I.

Indiana, alternate commissioner for, resolution relative to office of .....	43
Industrial organizations, address to .....	69-82
Installments upon subscriptions to stock of board of finance, time of payment of .....	69
International congress in 1876, proposed .....	62
International medical congress in 1876, proposed .....	63
International law, proposition relative to an international congress in 1876, to consider questions of .....	62

## J.

Japan, executive committee requested to take measures to secure representation of the industries, &c., of .....	62
Johnson, Franklin C., action relative to credentials of .....	36, 42
credentials of, referred to committee on credentials .....	29
Jones, S. S., communication from .....	35

## K.

Kelley, Hon. William D., invited to address the commission .....	50
Kentucky, favorable action of legislature of .....	69-74

## L.

Limitation of time of occupying the floor .....	62
Lindermann, Hon. H. R., Director of the United States Mints, communication from .....	34

## M.

Machinery-hall, situation of .....	94
Mass-meeting in Philadelphia, under the auspices of the executive committee .....	68
McKean, Mr. William V., remarks at conference meeting .....	40
Medal to commemorate the centennial, action relative to .....	34
Meeting of stockholders of the board of finance to elect directors .....	88

	Page.
Meetings of the commission, by-law relative to.....	61
recapitulation of.....	71
Memorial-building, plans for.....	95
Money, payment of, by-law relative to.....	61
Montgomery, Col. L. M., communication recommending appointment of, as special agent at London.....	35

## N.

National Academy of Design, co-operation of, requested in regard to art-gallery.....	64
New Hampshire, communication from the secretary of state of.....	57
Nomination of secretaries of divisions.....	61
North Carolina, favorable action of legislature of.....	69-73
Northern Pacific Railroad, communication from, proposing to exhibit, &c.....	90

## O.

Officers of the commission, election of.....	55-59
action relative to election of.....	46
Official title of commission.....	59
exhibition.....	59
Organization of directors of board of finance.....	34, 70, 86
Orr, the Hon. James L., committee appointed to prepare resolutions on the death of.....	34
resolutions of regret and condolence.....	53

## P.

Pamphlet explaining the nature and purposes of the centennial celebration and exhibition, preparation of, suggested.....	89
Patterson, Mr. Joseph; remarks at conference meeting.....	40
Payment of moneys, by-law concerning.....	61
Pennsylvania Horticultural Society, special committee of, appointed to confer with commission.....	90
Pennsylvania supervisors, resolution of thanks to.....	62
courtesies to.....	45
People of the United States, address to.....	69
Pettit, Henry, appointed special agent to Vienna.....	69
consents to serve gratuitously.....	69
submission of report of, &c.....	56
report of, referred to executive committee.....	56
Peyton, Col. Bailie, resolution of thanks to.....	64
Plans, mode of selecting.....	97
report of committee on.....	94
specifications for.....	96
and architecture, report of committee on.....	29
report of committee on.....	31
(See Committee.)	
Pratt, H. D. J., report of.....	89
abstract of Mr. Blake's reports annexed to report of.....	90
Pre-historic relics for the exhibition, offer of co-operation in collecting.....	90
Premiums, expense of, &c.....	71
Progress made by the United States during the last century, communication relative to a history of.....	35
President of the commission, election of the Hon. Joseph R. Hawley.....	55
by-law concerning.....	60
powers and duties of.....	60

## Q.

Quorum, what constitutes a.....	59
---------------------------------	----

## R.

Railway communication with Fairmount Park, importance of increased facilities of.....	91
Randall, the Hon. Samuel J.; remarks of, at conference meeting.....	41
Read, Wm. T., resolutions relative to the death of.....	34
Read, George, presentation to the commission of the Life and Correspondence of.....	34
Religious associations and clergy, address to.....	69-78
Report of Wm. P. Blake, special agent.....	29
committee on credentials.....	18



	Page.
Report of executive committee .....	18
executive committee amended .....	34
committee on credentials, relative to the claim of F. C. Johnson to a seat .....	36
conference committee to define the relative rights and duties of the commission and the board of finance .....	31
executive commissioner completed by H. D. J. Pratt .....	69
executive committee .....	68
H. D. J. Pratt .....	89
to Congress, information concerning .....	89
of secretary of commission .....	91
committee on plans and architecture .....	94
Representatives of the press, thanks to .....	67
Resolution to issue addresses to the people, &c .....	66
appoint a committee to attend the Atlanta convention of governors .....	67
of instruction to the executive committee, relative to the report of W. P. Blake .....	30
relative to the board of finance referred to the executive committee .....	31
relative to delivering subscription-books, &c., to board of finance .....	32
relative to obtaining immediate subscriptions .....	33
relative to the death of Wm. T. Read .....	34
to appoint a committee to prepare resolutions on the death of the Hon. James L. Orr .....	34
relative to a commemorative medal .....	34
commending the liberality of Pennsylvania, Tennessee, and Oregon .....	34
instructing the executive committee to issue a circular to exhibitors as to space .....	65
relative to the office of alternate commissioner for Indiana .....	43
relative to the claim of F. C. Johnson to a seat .....	37
on the death of the Hon. James L. Orr .....	53
relative to co-operation of the American Medical Association .....	44
of instruction to the committee on arts and sciences .....	34
instructing the commissioners to communicate with the board of finance relative to subscriptions in their respective States .....	65
requesting the secretary to keep a record of the full name, business, &c., of each commissioner .....	58
providing for executive commissioner repealed .....	58
relative to transportation to the exhibition .....	58
of instruction to the committee on classification .....	58
of thanks to Prof. Wm. P. Blake .....	59
Lewis Waln Smith .....	64
Col. Bailie Peyton .....	64
the Hon. Henry S. Foote .....	64
board of finance and State supervisors .....	62
relative to an international congress in 1876, to consider questions of international law .....	62
of instruction to the executive committee, relative to China and Japan .....	62
relative to an international medical congress .....	63
commending the centennial celebration passed by legislatures of various States .....	69
of the legislatures of various States relative to the centennial exhibition .....	72, 73, 74
of stockholders authorizing the directors of board of finance to fill vacancies in their own body .....	88
Rules for the organization of board of finance, amendments to .....	69
S.	
Scientific organizations, address to .....	69, 82
Secretary of the commission, election of .....	55
report of .....	91
directed to notify governors of vacancies in the commission .....	56
powers and duties of .....	61
by-law concerning .....	61
Secretaries of divisions, by-law concerning .....	61
Sessions of the commission, number of commissioners present at each, &c .....	71
Shoemaker, John L., re-elected solicitor .....	56
letter from .....	63

	Page.
Smith, Lewis Waln, report of, as temporary secretary .....	29
continued in control of the office during absence of secre-	
tary .....	58
resolution of thanks to .....	64
Smith, Horace J., communication from .....	91
Solicitor of the commission, election of John L. Shoemaker .....	56
Special agent to Vienna exhibition, report of .....	29
Special committee of conference of commission and board of finance .....	31
to communicate with American Medical Association .....	44
to confer with women's centennial executive committee, ap-	
pointment of .....	45
report of .....	48
on horticulture, appointed .....	65
made a standing committee .....	66
Specifications for plans .....	96
Standing committees, list of .....	61
by-law concerning .....	61
(See Committees.)	
Stated meetings, by-law relative to .....	61
Steam-railway from Fairmount Park to the city, recommended .....	91
Stockholders of Centennial Board of Finance, minutes of meeting of .....	28
Subscription-books delivered to board of finance .....	32
Subscription-certificates, form of .....	76
Subscriptions, time for return of books of, extended .....	65
Suggestions for disseminating information, &c .....	89
relative to railway communication with Fairmount Park .....	91
Supervisors of Pennsylvania, conference of, with the commission and board of	
finance .....	38
(See Pennsylvania Supervisors.)	

## T.

Teachers, address to .....	69, 80
Temporary secretary, report of .....	29
resolution of thanks to .....	64
Tennessee, thanks of the commission tendered to the commissioners from .....	53
favorable action of legislature of .....	69, 72
resolutions of legislature of, relative to the exhibition .....	72
Thompson, Mr. J. Edgar, remarks at conference meeting .....	40
Thanks. (See Resolution.)	
tendered to the representatives of the press .....	67
The press of Philadelphia, conference of the executive committee with repre-	
sentatives of .....	69
Title of commission .....	59
exhibition .....	59

## V.

Vacancies in commission to be reported to governors .....	56
Vice-presidents of commission, election of .....	55
powers and duties of .....	60
Vienna Exhibition, means taken to obtain information concerning .....	69
Virginia, favorable action of legislature of .....	69, 73

## W.

Welsh, Mr. John, president of the board of finance, remarks at conference meet-	
ing .....	38
Womens' association, organization of, recommended .....	30
Womens Centennial Executive Committee, officially recognized by executive	
committee .....	69
resolutions relative to .....	48
report of .....	30
co-operation of, accepted .....	30
resolution relative to .....	30, 56
communication from, requesting a	
meeting with the commission ..	45
committee appointed to wait on ..	45
report of .....	48
resolutions requesting commission-	
ers to authorize similar associa-	
tions in their own States .....	56



## APPENDIX C.

---

REPORT TO THE UNITED STATES CENTENNIAL COMMISSION, UPON THE ORGANIZATION, ADMINISTRATION, AND RESULTS OF THE VIENNA INTERNATIONAL EXHIBITION, 1873, BY WILLIAM P. BLAKE, MEMBER AND AGENT OF THE UNITED STATES CENTENNIAL COMMISSION.

*Letter transmitting the report.*

VIENNA, AUSTRIA, *July 16, 1873.*

SIR : The instructions which, as agent of the commission, I had the honor to receive from the executive committee require me, in addition to weekly reports of progress, to make a "general and well digested report," and a "final and full report," "not later than August 1, 1873." Having as far as was possible complied with the terms of these instructions up to this time, I now have the pleasure of transmitting the final report, with the expectation of its reaching your hands by the 1st day of August. It is, from the necessities of the case, not as complete and full as the subject requires, and as my inclinations prompt me to make it. It has been kept open until the latest day possible, in order to enable me to embody the latest information and conclusions. Some chapters not quite ready, together with illustrations, translations, and other material, will be forwarded by the 1st of August.

Very respectfully, your obedient servant,

WM. P. BLAKE,

*Agent of the Centennial Commission.*

HON. DANIEL J. MORRELL,

*Chairman of the Executive Committee of the*

*United States Centennial Commission.*

---

NEW HAVEN, CONN., *February, 1874.*

SIR : I have the honor to submit herewith the concluding portions of my final report, together with such additional information as my stay in Vienna, until the close of the exhibition, enabled me to obtain.

My acknowledgments are due to many persons for valuable assistance and suggestions in furtherance of the objects of my mission. His Excellency Baron von Schwarz-Senborn, the director-general, received me favorably on my arrival in Vienna, April 8, and promised me his assistance. We are indebted to him for a complete set of the plans, and for other data, which have been duly transmitted. I am also indebted to him and to other residents of Vienna, and to the Hungarian commission, for many courtesies extended to me as connected with the exhibition of 1876. I should also specially mention the co-operation and assistance received from Mr. Jay, our minister residing at Vienna, from Mr. Garrettson and Mr. McElrath, of the United States Vienna commission; from Mr. Owen, the secretary of the Royal British commission; from the secretary of the Engineer's and Architect's Association; Dr. Plason, one of the secretaries of the General Direction; Mr. Theodore L. Witt, of the Engineers' Bureau, and Mr. Carl A. Riby of the Construction Bureau.

I append a report, also, of the results of my labors under your later instructions, with a notice of the donations to the permanent museum, and a tabular statement of the extent and results of some of the chief international exhibitions.

Very respectfully, your obedient servant,

WM. P. BLAKE.

Hon. DANIEL J. MORRELL,  
*Chairman of the Executive Committee, &c.*

---

## CONTENTS.

I.—ORGANIZATION.....	111
II.—FINANCES.....	124
III.—LOCATION—REGULATION DANUBE.....	129
IV.—THE EXTENT OF THE GROUNDS.....	130
V.—THE BUILDINGS.....	142
VI.—ACCESS AND TRANSPORTATION.....	150
VII.—CLASSIFICATION AND ARRANGEMENT.....	165
VIII.—INSTALLATION.....	170
IX.—GENERAL REGULATIONS AND ARRANGEMENTS FOR THE COMFORT OF VISITORS.....	183
X.—POLICING.....	189
XI.—THE FIRE DEPARTMENT, WATER SERVICE, AND SANITARY FITTINGS....	191
XII.—PRINTING AND PUBLISHING.....	199
XIII.—HOTELS AND ACCOMMODATIONS.....	209
XIV.—TICKET REGULATIONS AND PRICES.....	212
XV.—NUMBER OF VISITORS.....	213
XVI.—JURY AND AWARDS.....	229
XVII.—INTERNATIONAL CONGRESSES.....	248
CONCLUDING OBSERVATIONS.....	266

---

## INCLOSURES.

Sentiment and co-operation abroad; donations; synopsis of the preliminary report presented in December, 1873.

Tabular statement of the extent, cost, and receipts of the principal exhibitions since the year 1851.

Substituting temporary exhibitions by permanent exhibitions, called general or commercial museums. Translation from the report of the Imperial Commission of 1867.

Observations on great exhibitions. Translations of selections from a work by Dr. Exner.

Remarks on classification. Translation of article by Dr. Lespeyres Wolowski on exhibitions.

The pavilion of international commerce.

Public cabs and carriage regulations.

Documents and translation.



## THE INTERNATIONAL UNIVERSAL EXHIBITION AT VIENNA, AUSTRIA, 1873.

## I.—ORIGIN AND ORGANIZATION.

The attention of the Austrian people appears to have been directed toward holding a great exhibition some time before the Paris Exposition of 1867 was projected, but the attempt to realize their wishes in the fullest degree was postponed in favor of the French enterprise. An exhibition of considerable pretensions was, however, held in the year 1866, under the auspices of the government, through the department of agriculture and forestry. The Prater was the locality. It was opened on the 17th of May, and closed on the 14th of June. Its duration appears to have been cut short by the war with Prussia. The first proposition to hold a great international exhibition at Vienna in the year 1873 is said to have proceeded from the Trades' Union of the city, a very wealthy and influential organization, with Baron Wertheimer, a safe-manufacturer, at its head.

It was supposed that it could be so carried out that the receipts would nearly cover the expenditures; at any rate, it was decided that a guarantee-fund of three millions of florins would be sufficient to cover all possible deficiencies, and subscriptions to this amount having been obtained, chiefly among members of the society, the government was induced to take an active part in the matter, and to announce, May 24, 1870, by an Imperial and Royal decree, "that, under the august patronage of His Imperial and Royal Majesty, the Emperor, an international exhibition will be held at Vienna in the year 1873, having for its aim to represent the present state of modern civilization and the entire sphere of national economy, and to promote its further development and progress."

The enterprise has thus from the outset been under the immediate patronage and control of the imperial government. It had not only its sanction, but its heartiest sympathy and support.

An imperial commission was named, consisting of one hundred and seventy-five members, selected from the chief officers of the departments of the government, and from the leading men of science, art, and industry in the empire, especially of those who have taken part in former international exhibitions, as members of the commissions, or as jurors, delegates, or reporters, and who have gained honor and distinction in their respective spheres of duty. The Archduke Charles Louis was named as the Protector, and the Archduke Regnier the President.

By the imperial decree of the 29th of September, 1871, a copy of which follows, the general arrangement and direction of the whole work was placed in the hands of the Baron William von Schwarz-Senborn, in January, 1871.

A previous law, of July 21, 1871,\* makes an appropriation of 6,000,000 of florins, one-half of which was to be regarded as a government loan, and the other half as an advance, without interest, to be returned out of the receipts.

---

\* A translation of this law will be found under the financial head.

STATUTE OF ORGANIZATION FOR THE UNIVERSAL EXHIBITION IN VIENNA,  
AUSTRIA, 1873.

*Announcement from the ministry of commerce, on the 29th of September, 1871.\**

I.—IMPERIAL UNIVERSAL EXHIBITION COMMISSION.

It having been determined by imperial decree, dated May 24, 1870, to hold an universal exhibition in the Prater of Vienna, and to open the same on May 1, 1873, there will be established an imperial commission for the representation thereof for foreign countries, and for the consideration of all the initiatory matters connected therewith; said commission to consist of gentlemen chosen from the heads of the imperial and royal ministries, from among the highest officials of the court, the chief city and state magistracies, the principal and most celebrated scientific unions and institutions of Vienna; and also from among the best-known representatives of science and art, the professions, trades, and industries; and also from among those eminent in agriculture and forestry, mining, and furnace-work.

The president, vice-president, and members of said commission will be appointed by His Majesty the Emperor himself.

II.—IMPERIAL AND ROYAL GENERAL DIRECTOR.

The whole direction, administration, and carrying out of the exhibition is, by private imperial letter and decree of January 9 of the current year, conferred upon the privy counselor Dr. William Baron von Schwarz-Senborn, as administrator of the exhibition, with the title of imperial and royal general director. To him will appertain, howbeit, under immediate accountability to the minister of the board of trade in the sense of the law of July 21, 1871, (*Reichsgesetzblatt*, No. 87, Legislative Journal:)

1. The independent direction, administration, and carrying out of the undertaking of the exhibition, both in a technical and financial and in every other point of view.

2. The fullest powers with regard to the engagement of the necessary working-forces, the direction and disposition of the same, and the organization of all business connected therewith.

3. The administration and disposition of the exhibition-fund.

III.—PREPARATION OF PAPERS AND DOCUMENTS.

All documents about business connected with the exhibition will be signed by the general director or by parties specially authorized by him for that purpose.

IV.—RELATIONS TOWARD THE CORPORATE BODIES.

All imperial and royal authorities are obliged, in their intercourse with the general director, to assist him in the fulfillment of his vocation, according to law, as much and as promptly as possible.

V.—APPOINTMENT OF OFFICERS AND SERVANTS.

The employés of the different bureaus of the general director shall be delegated from among the suitable persons now in the service of the

---

\* *Reichsgesetzblatt*, 1871, p. 293. Stück, October 4, 1871.



government. They will be placed at his disposal by the corresponding state departments to which they belong.

These officers who become incorporated into the service of the general director, according to agreement, remain on the list of their previous departments, and retain their rank and right of promotion as long as no change in their favor takes place during the continuance of the exhibition.\*

The regular salaries of these officers may, by virtue of an arrangement made with the general director, be discontinued during the time they are employed upon exhibition-work at the state paying-office where they heretofore have been made payable, and be transferred over to the exhibition fund, together with the additional amount granted them by the general director on account of the increase in their duties. All other working-forces, such as professional services, servants, &c., will be engaged by special private agreement.

#### VI.—EXHIBITION FUND.

There will be a separate and distinct fund established out of the moneys appropriated by government for the purposes of the universal exhibition, (according to the law of July 21, 1871,) to be paid out of the state's treasury; said fund to include also all the income from the exhibition itself and likewise the guarantee fund,† established by private subscription, and all the liabilities connected therewith.

The exhibition fund is meant for the defraying of all expenses of the exhibition, and for the fulfillment of the liabilities contracted with the state treasury, according to the above law of July 21, 1871.

In pursuance of this resolution, it will be administered and disposed of by the general director. The general director has the right, by this arrangement, to engage the co-operation of the imperial and royal Austrian "credit institution for commerce and trade," (*credit anstalt für Handel und Gewerbe*,) and in consequence of the character of the undertaking he is not obliged to follow the rules laid down for governmental financiering, so that the usual book-keeping regulations and prescribed forms in governmental matters may be dispensed with. At the close of every quarter the general director is to deliver to the minister of the board of trade statements of expenses; at the end of every six months, account-current of income and outlay, and at the end of the business year a complete balance-sheet of all accounts. Extracts from the same will be duly published in the "*Wiener Zeitung*," (Vienna Official Gazette.)

The exhibition fund has, like all other governmental moneys, the privilege of using the judicial finance lawyers of the Crown, (*Finans-Procuratur*,) and by the above-mentioned law of July 21, 1871, will enjoy freedom from stamp-duties and all kinds of government taxes.

---

\* In which case they will have to return to their posts in their advanced positions.

† *The guarantee fund*: When the idea of universal exhibition was first started in Vienna it met with great favor, although the treasury of Austria was rather low, and consequently many thought it hazardous for the state to undertake, at that time, the expenses of an exhibition, seeing that the finances of the country were not in a condition to justify such an enormous outlay. It was finally determined to appropriate the sum of 6,000,000 florins for the purpose of an universal exhibition, and the capitalists of Vienna subscribed their names for 3,000,000 florins, to constitute a guarantee fund. This fund was to be paid over to the directors of the exhibition in case proceeds of said exhibition should not reach one-half of the amount appropriated for the work, viz, 3,000,000. Since this was stipulated the expenses of the exhibition have far exceeded the above-mentioned sum of 6,000,000 florins, so that the terms relating to the guarantee fund are now an open question.



## FOREIGN COMMISSIONS.

The importance attached to the Vienna Exhibition by the principal nations is well shown by the character of the commissions they have appointed. In each of the European nations the most gifted and prominent men have been selected to do honor to the occasion. At no previous exhibition has there been such an array of names of men distinguished as statesmen, philosophers, or leaders in the industrial world. Spain sent no less than 271 commissioners; Switzerland, 219; Italy, 786, and Germany, 204. Belgium sent 83 commissioners, presided over by the Count of Flanders, and a sub-commission of specialists for each group, numbering over 100.

The annexed summary, drawn from the official list,\* may be interesting.

At the head of the British commission we find the Prince of Wales; and among the members Sir Andrew Buchanan, the Duke of Teck, the Marquis of Ripon, Earl Cathcart, Lord Lenox, Baron Rothschild, and T. Hawksley, president of the Institution of Civil Engineers. There were also commissioners for India, and a special executive staff composed of experts in exhibition matters.

In Belgium, Leopold II, the King, issued a proclamation acknowledging the reception of the announcement from the Austrian government, and appointing a commission, consisting of some of the principal engineers, manufacturers, and presidents of the chambers of commerce. In the list we find the names of Adan, director-general of the customs and a member of the Belgium commission to Paris, 1867; of Léon d'Audrimont, mining engineer, and a member of the commission to the London Exhibition, 1871; of Faissiaux, general director of the administration of railways, mail-service, and telegraphs, and member of the commission to the Paris Exposition of 1867; of Kindt, inspector-general of industry, and formerly a member of the commissions to the London and the Paris Exhibitions.

The same decree named M. Clerfeyt, who was secretary of the Belgian commission to Paris, 1867, to London, 1871 and 1872, as the secretary, but the president was to be elected by the members of the commission. The Count of Flanders was chosen as the honorary president, and the Baron t. Kint de Rodenbeke, as president. For the better promotion of the work, the commission resolved itself into three sub-commissions, and then again into committees upon each group. They also organized an executive department, and named a commissioner-general to be present and act at Vienna. The commission, thus organized, proceeded to interest the people of Belgium, and to secure a proper representation of the industries of that country.

In Russia, the work was intrusted to a central committee named by an imperial decree of the 26th November, 1871, under the direction of his excellency the minister of finances, with the Grand Duke Alexander as the honorary president. Among the twelve members we find the names of General Rachette, director of the department of mines; Demidoff, vice-director of the department of the interior; and of Popoff, chief of the section of the customs. The work of this commission was seconded by nine auxiliary committees constituted by the invitation of the commission at Moscow, Riga, Helsingfors, Orenbourg, Irkoutsk, and other places, and by a special commission appointed by the minister of war.

---

\* List of the Foreign Commissions, in alphabetical order, &c., 46, second edition, p. 87, Vienna, 1873.



Japan appointed a commission of fifteen, with his excellency Okuma Nobushige, member of the supreme council of state, as president.

The work of this commission was well promoted and encouraged by the imperial government.

### LOCAL COMMITTEES.

In addition to the imperial commission, a number of departmental commissioners or local committees, were organized for the purpose of stimulating the efforts of the producers and tradesmen in all parts of the empire of Austria. Among them may be noted the commission for Bohemia, for Dalmatia, Galitzia, Lower Austria, Upper Austria, Stienmark, Karinthia, Salzburg, Krain, Tirol, &c.\*

Each of these commissions was organized with great care, and they include many specialists who have been connected with the previous exhibitions.

Their functions were analogous to those of the eighty-nine departmental committees of the Paris Exposition of 1867, and to what might be expected of State commissions if organized in the United States.

This partial statement of the extent of the organizations by which, in various countries, the exhibition-work was initiated and carried forward, will serve to show how extensive and ramified the preparations or such a great exhibition necessarily are.

### WORKING ORGANIZATION OF THE IMPERIAL COMMISSION.

It being, in the nature of the case, impossible for so large a body of men to work as a unit, or to decide quickly and properly such intricate and technical questions as were constantly arising, it was deemed best to subdivide and organize in sections or committees. Twenty such committees were organized as follows:

#### LIST OF COMMITTEES OR SECTIONS OF THE COMMISSION, AND THEIR FUNCTIONS.

I. FINANCE.—*Management of the exhibition funds.*—All outlays of money; disposition of cash. Book-keeping.

II. ARCHITECTURE, BUILDING, ETC.—Accomplishment of the exhibition building. Preparation of the exhibition grounds. Lighting and ventilation of the building. Placing of the water-pipes and water-closets. Planning of the garden, streets, and paths. Apportionment of offices.

III. ARRANGEMENTS FOR DIVISION OF SPACE.†—Rules in regard to visiting the exhibition. Instruction of agents.

IV. REGULATIONS FOR THE RESTAURANTS, ETC.—Restaurants, dining-halls, bars, &c. Bureaus for information, and other private establishments, regulations of the Wurstel Prater.

V. LOCAL AFFAIRS.—The reception and lodging of strangers and foreigners; provisioning; local city affairs; salaries; order; safety and sanitary matters.

VI. COMMUNICATION.—Transportation; forwarding; customs; post; telegraphy.

VII. INSTALLATION OF MACHINES.—Distribution of steam; shafting, &c.

VIII. PRINTING AND PUBLISHING.—Exhibition catalogue; directing; publicity by the press; photographs; publications; statistics.

\* Vide the official programmes, Nos. 23 to 36, issued by the imperial commission.

† The classification and general plan of the exhibition appear to have been projected and pre-arranged by the genius of Baron Schwarz.



IX. ORGANIZATION OF THE JURY; OFFICIAL REPORTS.—Preparations for scientific and popular lectures, and for international.

X. ART OF THE PRESENT TIME.

XI. EXHIBITIONS OF ART-INDUSTRY.—Home-industry exhibition; church art amateurs' exhibition.

XII. EDUCATION.—Teaching; cultivation.

XIII. MUSIC.

XIV. AGRICULTURE.—Forestry and gardening. Temporary exhibition. Trials of agricultural-machines and working-animals.

XV. ARMY AND NAVY.

XVI. DIVISION FOR LOWER AUSTRIA.

XVII. DIVISION FOR HUNGARY.

XVIII. FOREIGN DIVISION.

XIX. EASTERN DIVISION.

XX. PREPARATIONS FOR THE ESTABLISHMENT OF ATHENEUMS, AND INCREASING THE USEFULNESS OF THE EXHIBITION.

As might be expected, some of these committees were very efficient, and others were not. Some met often, and others not at all. Some did good service; others only embarrassed the work by either not attending to their sphere, or by passing resolutions not in accord with the line of policy already determined on, or not in harmony with the views and resolutions of other committees. In most cases, where any good work was done it was performed by individuals; the experience in this case being only a verification of universal experience in all legislative and executive bodies. As bearing upon this matter, and as giving a very near insight of the work, I append a translation of a semi-official statement of what was accomplished through the principal committees.

Section XIV was occupied with all the business of Groups II and IV, and was certainly the most industrious and hard-working committee of all. The referee of this section, Dr. J. Arnstein, brought forward for consultation all official documents, special programmes, &c. Many resolutions were passed which may be of lasting benefit to the organization of agriculture and produce-exhibitions in the future. This section elected Prince Schwarzenberg for president. Among the members we mention Prince Colloveda, Mansfeld, Prince Schwarzenberg, and others, all men of great experience, and also the chief marshal of Lower Austria. The section formed sub-committees, of which those for beet-culture, machinery, horse-racing, and eating-halls, were the most active.

Next in importance is section XVI, under the presidency of Baron F. Wertheim and Herr Fr. Sachs. It was certainly peculiar that a section of the great commission should also act as a land-commission, while for other provinces separate committees were appointed. These latter had their own offices, and independent funds, but section XVI was supplied with officials by the general direction. These officers had to follow the direction of the committee, but great care was taken by the presidency of the Lower Austria commission, not to come in conflict with the policy of the general direction. Section XVI had only three general meetings, while the executive committee accomplished a great many most difficult tasks, not only for Vienna and Lower Austria, but for all the Crown-lands. To these committees belong the decision upon applications, the scrutiny of propositions for jury candidates, &c.

The executive committee consisted of Baron Dohlhoff, Dr. Exner, Professor Grünberg, Dr. Arnstein, and others. The greatest merit of this committee consisted in the agitation about sending goods to the exhibition. For that purpose twenty local or sub-committees were formed, who deserve great credit for breaking the apathy in the year 1872 of



many producers, and bringing 5,000 Austrian exhibitors more into the field.

Section XII had another most important mission, for instruction. A great many meetings were held by three executive committees, the results of which are some very valuable and most important special programmes for the exhibition of objects for instruction.

A real ornament in the Vienna Exhibition, and of great influence hereafter, was the exhibition of woman's work. It was proposed by Hofrath v. Eitelberger, and carried through by a ladies' committee, assisted by Dr. Migerka, Dr. Holdhaus, Exner, and others. The special programmes, especially those of the exhibition of drawings, only partially came into use, owing to the delay in publication.

The doings of the other sections are, in comparison, of little account.

Section XX met only twice, to hear reports about the doings of the general direction. Section IX met several times to discuss the rules of the jury. Section XVIII met only once, to organize and to receive a report from the general direction. Section XVII did not meet at all. Sections X and XI dissolved, in consequence of differences. The section for music held several meetings, one of which was to arrange the musical programme at the opening of the exhibition. Section XV was of no consequence, since it was decided that the Austrian army and navy, as such, would exhibit nothing. Of the other sections but very little or nothing is known.

Considering all these facts, we see that, although the Imperial Commission at the "Green Table" may have had some share in the whole, the committees of that corporation have not brought the exhibition, the great undertaking of the world, to its present aspect and completion.

A report of the work of the Imperial Commission would be incomplete and unjust, should we omit to mention the names of members of the commission who have done the lion's share of the whole. Several of these have done the whole work belonging to one or the other of the sections, without remuneration, and in fact supplied the place of a whole executive committee.

The following is a list of those members of the commission who were particularly active in the work from the first to the last:

*Finances*—Jagermeyer, v. Zimmermann, Goellheim. *Buildings*—Hasernauer, v. Engerth. *Installation*—Hornig, Isbary, Theyer, Giani. *Rural Economy*—J. Hirsch. *Communication*—v. Mauver, Schneider. *Machinery*—v. Grünburg. *Jury*—Hornig. *Music*—Hauslick. *Horticulture*—Arenstern, Abel Rudolph. *Prater Regulations*—Abel Lothar, v. Maurer. *Education*—Eitelberger. *Orient*—von Schwegel.

### THE GENERAL DIRECTION.

We have already seen, by the law of the 29th of September, 1871, page 112, that the whole direction, administration, and carrying out of the exhibition was by private imperial letter and decree of January 9, 1871, conferred upon the privy counselor Baron William v. Schwarz-Senborn, as administrator of the exhibition, with the title of imperial and royal general director. He was then in Paris, but hastened to Vienna to commence the work. To a high and just appreciation of the functions of great international exhibitions and their importance to nations and to civilization, he has added great experience of their organization and management, by his official connection with them as chief commissioner of the Austrian government in London, in the years 1851 and 1862, and in Paris in 1855.



The work and responsibility of planning, and of executing the plan, of this Vienna Exhibition have centered in the baron from the time of his appointment. He has given it his undivided attention, and only regrets that the time allowed him was so short. He seems to comprehend and compass every detail of every department, and is constantly appealed to for advice, information, and direction. The demands upon him are enormous, for a long time before the opening-day his office was besieged from morning till night by a crowd of persons waiting their turn for audience. He has been aided by a strong staff of officers, and has had, according to the provisions of the law, the privilege of selecting from the government departments the best men he could find. From the outset the baron has been the soul and the guiding spirit of the great work. He has planned it. The classification and the successive programmes are the emanations of his brain. He has lived to see his idea of a great exhibition realized. He has watched its evolution by day and by night with untiring energy and devotion. Having a clear and thorough conception of the great work to be accomplished he has from the first directed nearly every part and detail of it. He has been the great fountain of information to all engaged with him; has kept informed of the progress and necessities of each department, and has given his instructions and commands as the exigencies of the work required them. There is scarcely a plan or drawing of any detail which has not passed under his eye and received his criticisms, approval, or rejection. He has not permitted his associates to exercise much independent judgment. This is, perhaps, well enough in the inception of such an undertaking, especially when it was to be planned and marked out for accomplishment, but as the work of execution progresses and culminates in every department it becomes impossible for any one mind to follow the details, and discretionary power must be delegated.

The baron's course in this regard is freely criticised, and, it is thought by many of his friends, that it would have been better if he had given more power to his associates and allowed them more independence. He is a remarkable man, and has shown the most wonderful power of endurance. He has retained his health and pleasant, genial mood throughout, and seems capable of keeping on indefinitely in his Herculean labors. He is at the office from seven in the morning until late at night, often until eleven or midnight, and has received from twenty-five to thirty-thousand persons, besides the constant references made to him by his assistants. The demands upon his time by the commission have not been slight, and it is said that he has taken part in some 1,500 conferences with the commission or other officials. Upwards of 3,000 plans have passed under his eyes, and over 300,000 letters have been read.

There have been differences and conflicts of opinion between the commission and the general director. Committees have met and have passed resolutions which were sometimes not in accord with his ideas and plans, and it has been necessary for him to proceed without regard to such resolutions, not recognizing them as in any way binding upon him or as compelling his attention or deviation from the path he had marked out. Such were the relations of the commission and the director, and so did the work proceed to its completion.

As the work progressed various persons were employed, and many offices were constituted. In June, when the exhibition may be said to have been for the first time fairly ready, the



## NUMBER AND DESIGNATION OF THE OFFICES

were about as follows. No complete list had been published up to July 15, 1873, of these offices, or of the persons engaged in them forming the executive staff. In some of these offices there are only two or three persons; in others there are a large number.

## DIRECTOR-GENERAL.

His Excellency Baron Schwarz-Senborn, Dr. Plason, secretary, secretary for foreign languages, private secretary, clerks, attendants, messengers.

## ARCHITECT'S BUREAU..

M. von Hasenhauer, chief architect; H. v. Corompay, for carrying out the work; Herr Gagitz, for construction and decoration. This bureau comprises about forty men, assistant architects and draughtsmen.

In addition to the above-mentioned bureaus of construction the general director appointed an architect, Herr v. Mechitka, for the outside buildings, the offices of the direction, the covered ways of communication, &c. He was responsible only to the general director. His duties were to submit plans for all side buildings put up by the direction; to approve all those put up by private parties, such as restaurants and individual exhibits. His work extends to all buildings not included in the industry palace, machine-hall, and other main buildings designated by Roman numbers on the official plan. Mr. Machitka's force consists of not more than two assistant engineers and three draughtsmen in the office.

## ENGINEER BUREAU.

Von Engerth, chief engineer; Inspector Schmidt, superintending engineer for construction; Herr v. Grimburg, superintending engineer for machinery. The duties of superintending engineer for construction are all iron constructions, such as roofs, rotunda, &c. He employs about twelve men. The duties of superintending engineer for machinery are machinery, shafting; water-supply, including fountains, drainage, and gas. He employs about twelve or thirteen men. The whole engineer bureau consists of from twenty-five to thirty men.

Inspector Schmidt had four engineers in the office as designers and draughtsmen; two for conducting correspondence, and for copying; three to look after iron-work ordered outside the city, to inspect and pass it, to see it shipped in good order from the works where it was made and safely delivered on the ground; two on the plan of erection, to superintend the construction and putting up of the work by the contractors. Each of these two last had a practical foreman as an assistant. These foremen were required to be on the work late and early, and to represent the assistant engineers when away. The contractor had one chief engineer and three assistant engineers. Herr v. Grimburg, superintending engineer for machinery, employs about three to four men in his office, and the rest out on the work looking after machinery, shafting, drainage, and all the business connected with the water-supply and the fountains in the grounds.

## BUREAU FOR GARDENING.

The committee on gardening are Herren, Ranch, and Velter ; H. Ranch is the garden-inspector at Luxemburg, and has received two decorations ; H. Velter is the garden-inspector at Schönbrunn ; Herr Mally is their representative on the ground. On June 6, 1873, there were forty-seven gardening parties at work, including a force of 285 men. There was only one chief boss gardener, Herr Molitor. The highest number of men employed on garden-work at one time about the exhibition-ground was 382. The men were paid from 1.35 to 1.50 florins per day ; the women from 90 to 95 kreutzers. The women are employed in weeding, digging and wheeling, sowing, and planting ; the men for the heavier work. The boss gardener finds the water-supply sufficient everywhere for his work.

Herr Mally reports directly to the general director. Herr Molitor had charge once of the "Prater Regabrunn," (the Prater improvement,) where he worked, previous to the exhibition year, up to 650 men and 102 carts. The work of preparation commenced in 1869 and was continued in 1871. The ground was filled for more than four feet over nearly the whole exhibition-ground, and the soil for the flower-beds has been carted on.

## INSTALLATION BUREAU.

(Bureau of classification and arrangement.)

Herr Professor Hornig, administrative chief of bureau. The duties were the general direction and superintendence of the installation. In this bureau there was the technical department for the details and execution, with Herr Weber as architect and a force of six or eight assistant architects.

## PUBLISHING BUREAU.

The details of publishing programmes, catalogues, &c.

## TRANSLATING BUREAU.

For translating programmes into four languages, translating letters, &c., translation of notices, &c.

## PRESS BUREAU.

Believed to be intended to supervise the relations with the journals. Particulars not obtained.

## CATALOGUE BUREAU.

A large force occupied on the preparation and correction of the catalogues.

## REPORT BUREAU.

Professor Richter. I believe chiefly for making a history or record of progress, reports of progress, &c. He resigned about the 10th of July, after the decree concerning the finances.



## TICKET BUREAU.

For the preparation, registry, and issuance of tickets. Several offices and many persons are required on this work alone. The variety of tickets is great. Registry, &c. Tickets changed monthly. Complimentary lists, &c.

## FINANCE BUREAU.

In this all the accounts of expenditures and receipts are kept, (42 Prater Strasse.) Accounts are audited by government auditors detailed for the purpose, and are kept in the same way as the government accounts are kept.

## LAW BUREAU.

———, counselor; ———, counselor. Two chief law-advisers or counselors with their associates and assistants and clerical force.

## JURY BUREAU.

Office for the correspondence and work pertaining to the organization and labor of the international jury. There is in this no small amount of labor, as the account of the organization and work of the jury will show.

## SPECIAL OR LOCAL COMMITTEE BUREAU.

For the business connected with local or home representation. It appears to be, to some extent, a committee of admission for home or local products or tradesmen. Perhaps also as the medium of communication with the local exhibitions and organizations of Austria, and particularly Vienna.

## INSPECTION BUREAU.

A chief and several assistants are employed, and a force of fifty or sixty men under their command.

## POLICE BUREAU.

A central direction and office and several other offices and places of rendezvous for the officers and persons specially employed.

## MILITARY BUREAU.

A central and many subordinate offices for the commandant and his officers; also places for sentinels, &c.

A regiment of sappers and miners under the command of the colonel, and the usual complement of officers.

## SANITARY BUREAU.

For succor and relief to wounded, maimed or injured by accidents, or for sudden sickness, cases of fainting, a supply of remedies and surgical instruments is kept in readiness.

## ARCHIVES AND CORRESPONDENCE.

A chief clerk or secretary, with assistants, in whose office all the correspondence is recorded and filed away.

Connected with this office are copying-rooms, mailing-rooms, (Expeditions bureau,) &c., and a force of clerks and messengers.

## THE GENERAL OFFICES.

Most of these offices or bureaus, if not all, which are here enumerated are located at the building in Prater Strasse, (No. 42,) about one mile from the nearest entrance to the exhibition-grounds. The suites of rooms in that building are extensive and are probably equivalent in number and area to two such buildings as we occupy in Walnut street, Philadelphia.

There are also many offices occupied at the exhibition. On the right-hand of the main or southern entrance there is a long one-story building devoted exclusively to the offices of the general direction. The director has a complete suite, with the entrance from the inner court or garden. They consist of waiting and audience rooms, simply but elegantly furnished with tables for maps and for writing, and with telegraphic keys for signals to other parts of the building. One of the offices in this building is devoted to telegraphing, and others are occupied by draughtsmen and map-makers.

On the opposite side of the entrance a similar range of offices is devoted to postal purposes; to telegraphs for the public; to writing and reading rooms, and other purposes connected with the administration.

Along the façade of the palace of industry, at the west and east ends and in the center, there is another series of offices, about thirty in number, besides others on the second floor. Some of these are occupied by the foreign commissions, but nearly all upon the ground-floor are used for the executive and controlling departments.

Among others I note the following: engineer's office, drainage; general direction of west installation; installation bureau, Austria; rotunda installation; bureau Steiger; military direction; military commandant; "Obercommissar;" police inspection; sanitary bureau; reporters' rooms; installation of Group XXIV, of I, and of III.

## CORRESPONDENCE AND ARCHIVES.

The chief clerk's bureau appears to be connected with or to include a registry-office or index-room, where all the correspondence is recorded and filed away flat in sheets of paper, or wrappers, on which the subject to which the letter relates is indorsed.

The letters appear to be sent to the several bureaus, where the proper answers are prepared by, or under the direction of, the officer in charge. The draughts are then sent, with a memorandum of subject, date, &c., to the director-general's office, who approves, or rejects, or returns for modification. If approved, the letter is returned to the bureau from which it emanated, and it is from thence sent to the chief clerk's room, where it is copied and registered, and is then turned over to the mailing clerks to be mailed to its destination.

Printed memorandum sheets or wrappers are much used in the offices to hold the letters and papers. Samples of these are inclosed. One is used by the party who has draughted a reply to a letter and sends it to the general direction for approval. The number and date of the reply



are placed upon the wrapper, together with the signature of the party sending it, the date, and the hour, &c.

A second wrapper, inclosed, is intended to cover letters issued from the general director's office. The name of the author is given, the date of mailing and of recording, together with an analytical statement of the substance or contents of the communication.

WELT-AUSTELLUNG 1873 IN WIEN.

*Zur h. Revision.*

[Submitted for high approval or revision.]

BUREAU : (Name of Bureau.)

Herr JOHN BROWN.

legt vor die Geschäftsstücke :  
[Placed for examination.]

Nr.	praes. den——-[date]——, 187
Nr.	praes. den——, 187
Nr.	praes. den——, 187
Nr.	praes. den——, 187
Nr.	praes. den——, 187
Nr.	praes. den——, 187

[Enumeration of the number and dates of the letters inclosed.]

Zusammen. [Total number.] Stücke. [Pieces..]

Tag [Day] — Stunde [Hour] —

Unterschrift des Referenten oder Concipienten.  
[Signature of the referent or person who made the draughts of the letters.]

WELT-AUSTELLUNG 1873 IN WIEN.

GENERAL DIRECTION.

No.———	Abtheilung : [Referred to another depart-
Zum Einreichungs-Protokoll gelangt--187-	ment.]
Zum Expedit gelangt———187-	Zur Einsicht [for inspection of contents or
Mundirt [author]———	to give information of the nature of the
Collationirt [compared by]———	decision or order.]
Bestellt [mailed]———	
Zur Registratur gelangt [recorded]——187-	

GEGENSTAND.

Substance or analysis of the contents of  
the letter or communication.

VORACTEN.

Reference to communications sent pre-  
viously on the same subject.  
An———

WELT-AUSTELLUNG 1873 IN WIEN.

Abtheilung :  
Bureau :

Datum :

AGENDA.

ORGANIZATION IN 1867 AT PARIS.

At the Paris Exposition no less than 4,509 persons are enumerated as collaborators of the imperial commission. This number, however, includes the members of the jury and the subscribers to the guarantee fund ; but not the employés and persons engaged in the telegraph,

postal, and custom-house offices, but really in the staff of the exposition, to the number of 841.

Subscribers to the guarantee fund .....	1, 036
Imperial commission.....	66
Committees of the imperial commission .....	121
Commissioner-general .....	211
Foreign commissions .....	954
Jury of new order of recompenses.....	30
Jury upon fine arts, agriculture, and industry .....	629
Jury upon fine arts, agriculture, and industry, (associate mem- bers and substitutes).....	317
Authors and editors of the reports of the jury.....	250
Committees of admission.....	469
Bureaus of the committees of admission of Group X.....	35
Jury of admission of works of art.....	58
Commission upon the history of labor.....	6
Jury of admission for the gallery of history of labor.....	59
Jury upon alimentary establishments .....	7
Installation syndicates.....	190
Residents and secretaries of department committees.....	444
Commission for the exposition of agriculture.....	20
Commission for the horticultural exposition.....	10
Commission for the arboricultural exposition.....	3
Committee of weights, measures, and coins.....	36
Committee on ventilation .....	7
Committee upon the exposition of musical works .....	40
Committee upon yachts, and experiments in salvage.....	14
Commission for encouraging study by workingmen.....	70
Miscellaneous.....	54
Architects engaged in the erection of the trophies in the hall of the distribution of prizes:.....	10
Co-operating exhibitors in the exhibition of the history of labor.	868
Committee upon finance and auditing the accounts.....	7

## II.—THE FINANCES.

The financial foundation of the Vienna Exhibition enterprise was the guarantee fund of 3,000,000 florins, subscribed chiefly by the members of the Trades Union of Vienna. This, it was supposed, would be sufficient to cover the excess of the costs of the exhibition over the receipts. The sum was to be paid over to the director of the exhibition in case the proceeds did not reach one-half of the amount which, by the law of July 21, 1871, was appropriated for the work by the government. This amount was six millions of florins, (6,000,000 florins=\$3,000,000,) and the conditions of the appropriation will be seen by the terms of the law, a translation of which is appended.

### APPROPRIATION FOR THE EXHIBITION.

(Analysis of the law of July 21, 1871, (*translation*), by which a credit of 6,000,000 florins is voted for the exhibition to be held in Vienna, in the year 1873.\*)

With the consent of both houses of the Reichsrath, I hereby decree as follows:

ARTICLE I. That a credit of 6,000,000 florins is hereby established for the defraying of the expenses of the exhibition to be held in Vienna in the year 1873, and that under no pretext whatever is this sum to be exceeded.

\* *Reichsgesetzblatt*, 1871, xxxv Stück, 11th August, 1871.



ARTICLE II. That one-half of this sum will be considered as a government appropriation, and the other half as an advance made by the government without interest.

ARTICLE III. That the total receipts of the undertaking of the exhibition will be devoted to the repayment of this advance and eventually to the liquidation of this government appropriation.

ARTICLE IV. That if the total receipts of the enterprise of the exhibition together with the government appropriation are found not to be sufficient to cover the total expenses thereof, the government will call in the guarantee fund established by private subscription for the liquidation of the balance.

ARTICLE V. That if, on the contrary, the total receipts of the exhibition enterprise should exceed the moneys (Article I) devoted thereto by the government, such surplus after liquidation of said moneys (Article II) to be paid into the government treasury.

ARTICLE VI. That the moneys which make up the credit specified in Article I will be paid over in sums according as they are required. The yearly requisition for money for the years 1871, 1872, 1873, will be omitted in the annual estimates.

ARTICLE VII. That all moneys devoted to the interests of the exhibition will be free from stamp-duties and government taxes. All contracts and agreements connected with the exhibition made with companies and individuals for the construction and preparation thereof, such as those for the erection of the necessary buildings, and for all works and arrangements, are hereby freed from all stamp-duties and revenue-taxes until further official notice. The same freedom is extended to all contracts and documents put out for the establishment, verification, and collection of the guarantee fund, and to all paper relating to the terms and obligations of the same, as long as no judicial use thereof is made.

ARTICLE VIII. That the ministers of commerce and finance are hereby charged with the execution of this law.

Laxenburg, 21, 1871.

FRANZ JOSEPH, M. P.

HOHENWART, M. P.

HOLZGETHAU, M. P.

SCHAFFLE, M. P.

The sixth section of a succeeding law, September 29, a full translation of which has already been given, placed the exhibition moneys as a distinct fund in the treasury, to include all the appropriations made as well as the receipts and the guarantee fund.

The administration and disbursement of the fund was placed in the hands of the general director, and he was required to report expenses quarterly, and upon the expenses and income semi-annually, and to send in a balance-sheet at the end of the year.

The usual forms of accounting followed in the finance department of the government were made, by the same law, the forms to be followed by the general direction in accounting for this exhibition fund.

All the moneys were relieved from government taxes and stamp-duties.

As the work progressed, it was found that the costs had been underestimated, and that more money would be required from the government. This proposition, although strongly regretted and violently criticised, was accorded, and a supplemental appropriation of 6,000,000 florins was made.

The general director was well sustained by the government. Indeed, all felt that the honor and glory of Austria was thoroughly involved, and that the undertaking should be pushed through at any cost. Much dissatisfaction was manifested that the expenses should have been greatly underestimated.

At a later date, June 14, 1873, the following decree appeared :

#### IMPERIAL DECREE UPON THE ADMINISTRATION.

His Imperial Austro-Hungarian Majesty, on the 9th of June, made a new decree concerning the financial administration of the exhibition, a copy of which was promulgated in the official paper, the *Wiener Zeitung*, on the 14th of June, 1873 :



[Translation.]

His Majesty has deigned to approve of the following changes in the organization-statute of the 29th of September, 1871, for the universal exhibition at Vienna, 1873.

1. A council of administration, consisting of officers of the government, is to be joined to the general director for the whole technical administration of the exhibition, and the management in money-matters, including the engagement, superintendence, and employment of the person wanted for any service as well as for the execution of that service.

2. In all those dispositions which involve an expenditure of money, the general director must consult the council of administration, without whose approval and signature any contracts, obligations, or promises are invalid. [Lose their sufficiency in law.] Exhibition documents and papers concerning money-matters require, in addition to the signature of approval by the general director, the counter-signature of the chief of the council of administration, or of his substitute. Such documents and arrangements have, however, the necessary validity, if, without the signature of the general director, they are signed by the chief of the council of administration and one member of that council.

3. The management of the credits allowed to the exhibition as well as of the money advanced, including the guarantee funds, shall hereafter be in the same way as has been prescribed for all other branches of state accounting, and all records of the receipts and expenditures connected with the exhibition shall be kept at the cashier's office at the exhibition.

For the management of the books and the accounts the council of administration will be assisted by experienced clerks, who will be required to give the necessary evidence of their qualifications, and the books will be kept in the same manner as they have been at the exhibition up to this time.

The statute of organization of the 29th of September, 1871, as far as it conflicts with the present decree, is without effect.

BANHANS,  
*Minister of Commerce.*

It is not possible to obtain statements in detail of the actual expenditures on account of the exhibition. No balance-sheets have appeared, and it is uncertain whether a complete showing will ever be made; at least, a complete account of the whole cost and receipts cannot be expected until some time after the exhibition has closed and its affairs have been wound up.

The following approximate statement is the best that I have been able to procure up to the time of closing this report:

EXPENDITURES FOR BUILDINGS, ETC.—*Approximate.*

Designation of building or purpose.	Vienna florins.
Industry palace, including the rotunda and half-gallery.....	6, 289, 018
Machinery-hall .....	951, 448
Agricultural hall.....	670, 000
Art-hall, or art-building.....	742, 000
Pavilion des Amateurs.....	122, 600
Imperial pavilion.....	20, 000
Covering in the courts.....	580, 000
Jury pavilion.....	144, 000
Office-buildings.....	75, 042
Postal, telegraph, and custom-house buildings.....	53, 477
Six guard-houses.....	34, 989
Ten guard-houses, smaller.....	40, 904
Barracks for infantry.....	64, 500
Barracks for cavalry.....	14, 978
Sutler's house.....	8, 700
Fences and covered corridors.....	292, 000
Sanitary service.....	4, 681
Aqueducts, water-service, and water-tower.....	340, 000
Boilers, shafting, supports, &c.....	603, 400
Temporary or provisional buildings.....	15, 000
Expenses for offices at the building.....	345, 000



Designation of building or purpose.	Vienna florins.
Preparatory work for the offices at the building.....	40,000
Requisite for the offices at the building.....	12,000
Raising the rotunda.....	22,800
Drainage and water-closets.....	147,000
Basins.....	25,000
Telegraph and gas.....	36,800
New annexes.....	500,000
Grading, garden-work, railway, &c.....	369,479
Avenues, roads, paths.....	748,931
Cashier's office.....	4,314
Redemption of ground-concessions.....	12,156
Sundries.....	69,366
Central administration.....	1,553,000
Bricks, difference in cost of.....	95,000
Reserved fund.....	352,416
Total in Vienna florins.....	15,700,000
Total in dollars, approximately.....	\$7,850,000

The latest official financial statement I have been able to procure is the quarterly statement, published in October last in the Wiener Zeitung, giving the accounts of receipts and expenditures up to the first of that month:

## RECEIPTS.

	To end of 1872.	First quarter, 1873.	Second quarter, 1873.	Third quarter, 1873.	Total.
	<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>
Receipts proper.....	190,475.53	175,046.98	1,000,302.49	1,315,802.65	2,681,627.655
Other sources.....					4,329.155
State donation.....					15,043,314.15
					17,729,270.96

## EXPENDITURES.

	To end of 1872.	First quarter, 1873.	Second quarter, 1873.	Third quarter, 1873.	Total.
	<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>
Paid out.....	6,531,016.915	2,466,698.54	3,753,827.52	2,018,390.15	14,769,933.125
To credit of state treasury.....					2,681,627.655
Cash.....					277,710.18
					17,729,270.96

## RECEIPTS FROM VISITORS.

The total amount received from visitors from the beginning until the close, on the 2d of November, was 2,567,297.56 Vienna florins, equal, approximately, to \$1,283,648.78. The other sources of revenue were the rents of space, the concessions for various purposes, and the sale of the buildings. These sources it was estimated would yield, respectively, 1,000,000 for space, 240,000 for concessions, and 4,000,000 for the buildings. This last sum appears to be far too high. The deficiency, probably, will not be less than 12,000,000 florins, or \$6,000,000, which the government will meet.

A later statement places the total outgo as, florins, 19,700,000, or \$9,850,000 in United States currency. The income was in round numbers, say, \$2,000,000, leaving a deficiency paid by the Government appro-

priations of \$7,850,000. But it is probable that the value of the buildings and improvements incident to the exhibition, will figure in the final showing as fully equal to their cost.

At Paris, in 1867, the receipts from visitors were 10,865,419 francs, equal to \$2,432,709 in round numbers, and the expenses were about \$4,596,763, leaving a deficiency, after adding the receipts from other sources, of 8,869,156 francs, or \$1,773,831, which was covered by the appropriations made by the city and state respectively of 6,000,000 francs—a total of 12,000,000 francs, or about \$2,400,000. This aid left a surplus, which was divided between the city, the state, and the subscribers to the guarantee fund, so that each subscriber received back the amount paid in, with interest, and a large dividend in addition.

The receipts from various concessions at Paris in 1867 amounted to 1,278,720 francs, and in 1862 to 1,002,538 francs. A charge was made also for water and gas, 18,757 francs being taken in for the former, and 100,454 for the latter.\* The sale in 1867 of the buildings and materials used in the constructions of the park, notably of the aquarium, realized the sum of 1,075,255 francs, or about \$213,051.

APPROPRIATIONS MADE BY VARIOUS COUNTRIES FOR THE VIENNA EXHIBITION.

The money appropriated by the several participating nations constitutes a large part of the total expenditure of an exhibition, and is probably fully equaled in amount by the exhibitors from the same countries. The following is an approximate statement in dollars of the amounts appropriated by the countries named:

German Empire†.....	\$750, 000
France .....	300, 000
England .....	100, 000
Italy.....	200, 000
Japan.....	150, 000
Turkey.....	500, 000
Egypt .....	500, 000
United States.....	200, 000
Belgium.....	100, 000
Greece .....	30, 000
Russia .....	.....
Brazil.....	.....
China.....	.....
	<hr/>
	2, 830, 000

We can safely estimate the full amount for all the nations at not less than \$5,000,000; and upon the supposition that an equal amount was expended by exhibitors, we have a total of \$10,000,000 to be added to the cost of the exhibition.

The expenditure by Great Britain, in 1867, at Paris, was, less amount realized by sale of old fittings, &c.. £120,654. Egypt, with about one-twentieth the space, expended £60,000; Prussia, £30,208; Italy, £33,060; Austria, £40,000.

\* One thousand four hundred cubic meters of gas were consumed daily, and the price paid was 30 centimes per meter.  
† There is a statement that Germany expended over £200,000.



## III.—LOCATION OF THE EXHIBITION.

The place selected as the site of the exhibition is the far-famed Prater, the great place of daily resort for the Viennese of all classes. It is the public park, promenade, and drive, and, aside from the exhibition, has many attractions. The land is level. It is the bottom-land of the Danube, and large portions of it have been liable to overflow when the river has been greatly swollen.

## REGULATION OF THE DANUBE.

The location is in the immediate vicinity of the great work for the regulation of the flow of the Danube, and the two undertakings appear to have been more or less connected in the thoughts of the projectors or engineers, and of the government.

If the exhibition enterprise was not in part designed to promote the ulterior success of the great work of regulating the flow of the Danube, and of reclaiming a large area of land along its course, it certainly will have that effect, for, aside from turning the attention of the people of Austria and of the world to the present and future commercial advantages of Vienna, a great amount of work has been done for the exhibition, such as grading, embankment, and track-laying, which will be of permanent value to the Danube improvement. The sewerage and the water-service may be added to the grading, and, finally, the principal buildings themselves, which one cannot doubt are to remain, if not permanently, at least for years. The machinery-hall is to be used by the great Northern Railway Company as a freight or grain depot, and it is more than probable that this company is largely interested in the schemes for the permanent improvements of that part of Vienna.

A map, which is inclosed, of the proposed regulation of the river, shows very clearly the intentions of the government regarding the splendid water-front to be secured along the whole breadth of the city and the length of the prater.\* Almost a new city is projected in the space lying between the Northwestern Railway, the present site of the exhibition, and the new quay of the Danube. It is easy to see that the work of preparation of the exhibition-grounds and the general direction of the public attention to that region in consequence of the exhibition, could not fail to promote the objects of the government. The gravel dredged from the new channel for the river has, in part, been used to raise the level of the ground upon which the exhibition-buildings now stand four feet or more. This has given a good foundation, pervious to water and clean at all times. In rainy weather the surface is not muddy, and in dry weather it is not dusty. It has certainly been highly advantageous to have an abundance of such grading material at hand.

Another great advantage of the location has been the close proximity to an unfailing supply of water, obtainable simply by digging a few feet, or by means of the American tubular well.

It is said that if the Danube should rise three feet above its usual high level, there would be one foot of water in the rotunda. The floor, it will be remembered, is several feet lower than the floor of the industry palace.

---

\* The Danube regulation consists essentially in changing the course of the Danube opposite the city, by confining its current to a straight, deep channel along a well-constructed quay, thus diverting it from a broad and intricate system of shallow channels, none of which were conveniently available for navigation to the city. A large area of land will be reclaimed for agricultural purposes, and a fine water-front will be secured.



The work of preparation of the ground commenced in 1869, and was continued through 1871. Half a million of cubic meters of gravel were taken out of the new channel, and put upon the exhibition-site. Six hundred and fifty men and one hundred and two carts were employed there at one time.

The surface of the ground under the industrial palace was not by any means left in a graded, level condition. It was full of irregularities and holes. The building rested on piles, and these were of course cut off level, so there was no necessity for grading the covered area.

#### IV.—AREA OF THE EXHIBITION AND APPORTIONMENT OF SPACE.

One of the first questions usually asked by those who wish to learn something regarding the Vienna Exhibition is, "How much ground did it cover, and how did it compare with the exposition at Paris in 1867?" The idea of magnitude, with most persons, is inseparable from that of a successful exhibition. If we assume that each of the great modern exhibitions was as compact and perfect as possible, it is true that we should expect the last one to exceed the others in magnitude, provided the location were equally favorable. For as new discoveries in science are made, and modify existing arts and processes; as new inventions arise, as improvements are brought forward, and new products are introduced, so the range and extent of an exhibition must be enlarged. But there is a more radical element which affects the size of an exhibition. It is the disposition of the people to take part in it. This depends greatly upon its location, its accessibility, nearness to great centers of population, and the notoriety which the undertaking secures at an early date as destined to surpass all others in grandeur and magnificence. But though a universal international exhibition is necessarily extensive, it is by no means true that its value or excellence depends upon its size. The points of excellence are rather the degree in which the great ends sought to be attained by such exhibitions are promoted by their organization, arrangement, and regulations. It is not the space they cover, but the way in which the space is covered, that marks their excellence. It is time that this popular idea of superiority based upon greater length and breadth, or number of acres covered, should be modified, and that progress should be sought and recognized in other directions.

Great extent of an exhibition may be a positive blemish, and detract from its usefulness. If very large, they are unwieldy and distracting. These defects are particularly evident when the classification and arrangement are faulty. The general criticism upon the Vienna Exhibition was, "It is too large." It was inconveniently so, and the defect was increased by the want of system in placing the objects shown. Rich beyond precedent in almost all departments, it was to a great extent a medley, and to those who had little time to give to it a disappointment. Unlike the exposition at Paris it did not unite and facilitate the comparison of similar objects from a diversity of sources. They were in general widely separated and difficult to find.

Mr. Le Play, in presenting a summary of the work of the imperial commission for the exhibition of 1867, says that experience indicates the necessity of having for a future universal exhibition an area of over 700,000 square meters, and points out the difficulty or impossibility of securing such extended vacant spaces in the great capitals, London or Paris.



THE AREA OF THE GROUND INCLOSED.

The total area of the ground inclosed by the fence was about 280 acres, or 1,131,235 square meters. The area of the Champ de Mars, Paris, 1867, was 119\* acres, or 459,340 square meters. Both tracts were nearly rectangular in form. The extreme length of the Vienna inclosure was about 1,400 meters, and the width 720 meters; that at Paris was ——— long, and ——— meters wide, approximately.

The total length of fencing, including the entrances, around the Vienna tract was approximately 4,500 meters, or 14,763 feet. At the entrances, the fence was replaced by buildings or special structures the total length of which was some 690 meters, distributed as follows :

	Meters.
South entrance .....	200
West entrance .....	200
North, railway-station.....	150
East, barracks .....	140
	<hr/>
	690

or about 2,242 feet, thus reducing the total length of fencing to about 12,521 feet.

For convenience of reference, this whole area within the fence was divided upon the maps into four parallel east and west zones. Zone II included the principal building, the art-galleries, &c.; Zone III the agricultural halls, and Zone IV the machinery-hall.

*Statement of the superficial areas of the four zones, with their subdivisions, of the inclosed space devoted to the exhibition.*

(In square klafter, Austrian, 1,121 = 1 acre.)

ZONE I.		Square klafter, (Austrian.)
Park south of palace, with buildings of general direction, jury-pavilion, Emperor's pavilion, &c.....		116, 040
ZONE II.		
(a.) Palace of industry main building, space allotted, 480x112.....		53, 760
(b.) Space allotted to art-buildings, 143x112.....		16, 016
(c.) Space allotted to rural department, farm-homes, &c., 147x112.....		16, 464
ZONE III.		
(a.) Space allotted to buildings for mining and agricultural products, 645 x70 .....		45, 150
(b.) Space allotted to the village, 142x67.....		9, 514
ZONE IV.		
Space allotted to the machinery-hall and its dependencies .....		47, 790

\* The island of Billancourt, 52 acres, is not included in this, but if added, gives a total of 171 acres. The latest official report gives the whole area, in square meters, as 687,835, which includes Billancourt.

SUMMARY OF SPACES ALLOTTED.

(In square klafter, square meters, and in acres.)

(One acre=4,046.7 meters, one klafter = 3.61 meters ; 1 acre = 1,121 klafters.)

Area of ground allotted to—	Square klafters.	Square meters.	Acres.
ZONE I.			
Park, south of Industry Palace.....	116, 040	418, 904	103. 5
ZONE II.			
(a.) Industry Palace .....	53, 760	194, 074	47. 9
(b.) Art Buildings.....	16, 016	57, 818	14. 3
(c.) Village of Farm Buildings .....	16, 464	59, 435	14. 7
ZONE III.			
(a.) Mining and Agriculture .....	45, 150	162, 992	40. 3
(b.) Village Portion.....	9, 514	34, 346	8. 5
ZONE IV.			
(a.) Machinery Department .....	47, 790	172, 522	42. 6
(b.) Material Depot, General Direction.....	8, 350	31, 144	7. 4
Total .....	313, 084	1, 131, 235	279. 2

OUTSIDE GROUND FOR EXHIBITION PURPOSES.

Beyond the eastern gates of the inclosure there was practically an unlimited area of vacant alluvial land, which was freely used as occasion required for the cattle-show, the horse-exhibition, the races, &c. Here also, along the railway-tracks, the depots for the empty packing-cases were located. In addition to this broad space at command, considerable areas of ground were required about the chief entrances, not only for architectural effects but for the accommodation of the crowds of people and of the vehicles arriving and departing, and especially for the carriages and cabs waiting.

*Exterior spaces allotted outside of the fence.*

(Portions of the same space were used for different purposes at different times.)

Space assigned.	Square klafter.	Square meters.	Acres.
Entrance space, south.....	1, 600	5, 776	1. 4
Entrance space, west.....	4, 480	16, 173	4. 0
Entrance space, northwest .....	750	2, 708	0. 7
Depot for packing-cases .....	28, 125	101, 531	25. 0
Horse-exhibition { a, buildings.....	2, 304	8, 317	2. 1
b, hippodrome .....	20, 000	72, 200	17. 8
Cattle-show .....	20, 000	72, 200	17. 8
Total space at command for the cattle-show and horse- show .....	185, 600	670, 016	165. 6
Spaces allotted to carriages, (stands).....	35, 000	126, 350	31. 2



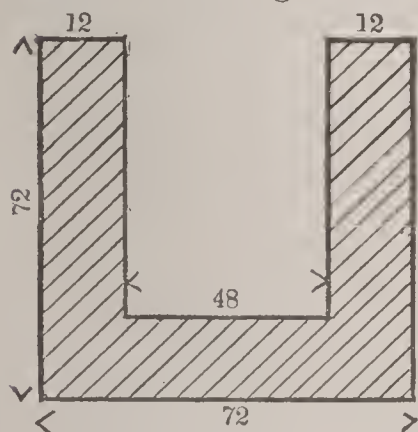
### CARRIAGE-STANDS.

There were four principal stands allotted to cabs, carriages, and omnibuses, and each of them at a sufficient distance from the entrances to the exhibition to prevent all disagreeable noise, confusion, and odors. The principal stand was near the west end, where the several lines of omnibuses delivered their passengers. Here 14,000 square klafter (12.4 acres) were assigned to omnibuses and cabs, one-half of this space to each.

At the Rondeau, near the east end, 9,432 square klafter (8.41 acres) were assigned to cabs, (*fiakers*;) at the south entrance, 8,800 square klafter (7.35 acres) for 500 *fiakers* and 200 one-horse carriages, and, in addition, 1,000 klafter were assigned to the carriages and vehicles of the officers of the exhibition. At the Wurstelprater 2,000 square klafter were reserved; making a total of 35,232 square klafter, equivalent to about 31½ acres.

### SPACE DEVOTED TO HORSE-EXHIBITION.

The building for the protection of the horses was erected on three sides of a square of 48 klafter, and was 12 klafter wide, making a structure 72 klafters long on each side, giving a covered space of 2,304 square klafter. One acre contains 1,121 klafters. The same building was used for the cattle-show before the horse-show. The total space at the disposal of exhibitors, including the building and outside grounds, was 290 by 640 klafter, giving 185,600 klafter; but more could have been had, if required, and the space is given in round numbers as 20,000 square klafter.



### AREA OF THE INDUSTRIAL PALACE.

The statements published of the area of the exhibition-building vary greatly, apparently in consequence of the different ways of measuring it; some persons including as parts of the building the courts, whether inclosed or not, and even taking in the area of the garden-spaces around the dome. Failing to obtain any satisfactory statement of the floor-area, I have made as close a calculation as possible, and find the total floor-space, exclusive of the courts, was 78,328 square meters, or 19.35 acres, distributed as follows:

	Square meters.
Main transept, (392 <sup>m</sup> .3 x 2 x 25 <sup>m</sup> ).....	19,615
Cross galleries, (28, each 75 <sup>m</sup> x 15 <sup>m</sup> ).....	31,500
Galleries about the dome.....	13,529
Dome and half-gallery.....	13,684
Total.....	78,328

This is the area of the building as projected and constructed.

To this should be added the area, as below, of the courts which were subsequently inclosed and occupied.

### AREA OF ANNEXES.

The courts between the transepts were in most instances roofed over,

wholly or partially, in order to obtain more room. The area so obtained was for several of the countries as below.

	Square meters.
America, United States of.....	2,570.00
Austria .....	25,700.00
Belgium .....	428.66
China and Japan.....	1,285.00
Denmark .....	1,712.68
France.....	5,140.00
German Empire.....	2,570.00
Great Britain.....	1,300.00
Holland.....	428.66
Hungary.....	1,302.45
Italy.....	2,440.00
Russia.....	1,028.00
Switzerland .....	1,714.00
Total .....	47,619.00

This shows a total area for the courts of 47,619 square meters, the figures being close approximations, and the same, with a few exceptions, as were furnished to me by one of the engineers in the building bureau. We then have for the total superficial area or floor-space of the main building :

	Square meters.
Floor-space exclusive of courts.....	78,328
Floor-space of courts.....	47,619
Giving a total of.....	125,947
or ——— acres.	

AREA OF MACHINERY-HALL.

The total length of the machine-hall was about 800 meters and its breadth 45 meters, giving in round numbers 36,000 meters (35,554, according to table *infra*) for its area, or in acres 8.73. The agricultural halls covered about 7 acres.

In order to make a direct comparison of the area of the Vienna Exhibition with that of Paris we should include with the foregoing the area of the agricultural halls and the art-galleries. The whole includes the chief buildings and forms a tolerably fair basis of comparison, though Vienna was richer than the Paris Exhibition in special displays outside of the main building. On the other hand, the larger portion of the agricultural displays were made outside of the chief building at Paris, and are not included in the estimate of area covered.

RECAPITULATION.

*Area of chief buildings at Vienna.*

	Square mèters.
Industrial palace and courts covered.....	125, 947
Machinery-hall.....	35, 554
Agricultural halls .....	28, 071
Art-gallery .....	7, 000
Amateurs' exhibition.....	4, 000
In square meters.....	200, 572



This is equivalent to a little less than 50 acres. The area of the elliptical building at Paris, exclusive of the central garden, was 153,138 square meters, to which may be added 6,935 square meters of entrance-spaces and covered porticos, making in all 160,073 square meters, being 39.5 acres. It is usually stated as 40 acres, which includes the central garden. The final report of the imperial commission gives the following data in full regarding the area of all parts of the Paris Exposition:

*Areas assigned to different parts of the exposition, 1867.*

A.—CHAMP DE MARS.

1.—PALACE.

	Square meters.	
Grand vestibule.....	3,592	
Radial passage-ways .....	14,265	
Circular passage-ways.....	20,663	
Exterior promenade.....	10,748	
Interior promenade.....	2,206	
Gallery of the history of labor.....	2,620	
Gallery of works of art.....	5,731	
Liberal arts, furnishings, clothing, and raw materials .....	54,194	
Machine-gallery.....	26,965	
Food and alimentation .....	12,154	
Area of the palace proper.....	153,138	
Entrances and covered porticos.....	6,935	
Central garden.....	5,743	
Area of the palace and its dependencies .....	165,816	165,816

2.—PARK.

Covered surfaces .....	52,113	
Uncovered surfaces .....	118,508	
	170,621	
Walks of eight meters and above.....	46,761	
Paths of more than 3 <sup>m</sup> .50.....	27,792	
Surface of the park.....	245,174	245,174

3.—GARDEN.

Covered portions .....	7,250	
Uncovered portions.....	41,100	
Area of the garden, including the roads .....	48,350	48,350
Area of the Champ de Mars inside the fence.....		459,340

4.—QUAY.

Covered portions.....	3,978	
Floating exhibition.....	925	
Restaurants.....	1,016	
	5,919	
Roads and terraces .....	2,476	
		8,395

B.—ISLAND OF BILLANCOURT.

Covered portions.....	5,580	
Uncovered portions .....	136,620	
Bureaus, restaurants, shops.....	5,550	
Roads and paths .....	72,350	
		220,100
Total area of the exposition of 1867.....		687,835

There is also an important tabular statement, showing the area occupied by each of the countries, which is worthy of attention.

*Area of surface assigned to each country in the Champ de Mars, 1867.\**

Country.	In the palace.	In the park.		Upon the quay.	Total area.
		Covered.	Uncovered.		
France .....	67, 025	27, 891	58, 319	41, 311	157, 546
Holland .....	2, 208	909	3, 803	.....	6, 920
Belgium .....	7, 336	2, 416	6, 756	.....	16, 508
North Germany .....	12, 791	896	8, 200	.....	21, 887
Hansa .....	1, 032	20	104	.....	1, 156
Baden .....	823	.....	.....	.....	823
Württemberg .....	1, 312	428	588	.....	2, 328
Bavaria .....	1, 178	565	571	.....	2, 314
Austria .....	8, 569	1, 686	7, 241	.....	17, 496
Switzerland .....	2, 948	1, 412	2, 136	.....	6, 496
Spain .....	2, 015	578	800	.....	3, 393
Portugal .....	696	157	1, 163	.....	2, 016
Greece .....	696	.....	.....	.....	696
Denmark .....	1, 049	18	400	.....	1, 467
Sweden and Norway .....	2, 010	469	2, 167	.....	4, 646
Russia .....	3, 145	1, 439	1, 707	.....	6, 291
Italy .....	4, 030	438	2, 522	.....	6, 990
Papal States .....	419	64	346	.....	829
Roumanian principalities .....	901	58	1, 632	.....	2, 591
Turkey .....	1, 347	352	2, 432	.....	4, 131
Egypt .....	555	1, 634	4, 266	.....	6, 455
Persia .....	105	.....	.....	.....	105
China .....	362	725	1, 366	.....	2, 453
Japan .....	591	107	1, 051	.....	1, 749
Siam .....	137	87	183	.....	407
Tunis .....	439	651	1, 857	.....	2, 947
Morocco .....	726	198	674	.....	1, 598
United States of America .....	3, 870	1, 642	3, 472	.....	8, 984
American republics .....	704	.....	.....	.....	704
Brazil .....	470	.....	.....	.....	470
Hawaii .....	63	.....	.....	.....	63
Great Britain .....	23, 586	7, 273	4, 752	1, 608	37, 219
Partial totals .....	.....	52, 113	118, 508	.....	.....
General totals .....	153, 138	170, 621	.....	5, 919	329, 678

\*Rapport sur l'Exposition Universelle, Paris, 1867. Commission Imperiale, p. 440.

OUTSIDE STRUCTURES.

In Vienna, as at Paris, the grounds surrounding the main buildings were crowded with supplemental structures, either to accommodate exhibitors for whom room could not be obtained in the industry palace, or for special exhibitions by countries, companies, or individuals, or as architectural displays showing the styles or methods of construction in use in distant lands. The published list of the Paris buildings enumerates some 120 or more. There were probably not less than 150, as many appear upon the maps without any references. At Vienna there were probably over 200.

A list of them, with the areas in square meters, is appended. This list is compiled and translated chiefly from data obtained from official sources. There are probably some omissions, and, in some instances,



the area was not ascertained. An enumeration of the principal buildings in each of the four zones, made from one of the latest official plans before I left Vienna, gave me for—

Zone I.....	82
Zone II.....	27
Zone III.....	53
Zone IV.....	23
	<hr/>
	185

A total of 185 constructions, besides the machine-hall and the industry palace, exclusive of the telegraph-stations, water-closet buildings, and various small pavilions. In the Volksprater, adjoining the grounds, there were 103 buildings for public resort.

*List of additional buildings and structures, with their area in square meters.*

	Square meters.
Jury pavilion .....	1, 050
Imperial pavilion.....	600
Offices of the general direction .....	2, 370
Barracks for the military guard .....	2, 880
Exhibition of live-stock, building for.....	4, 000
Flower-exhibition tent.....	2, 500
Trade and commerce of the world .....	1, 600
Sanitary-exhibition pavilion.....	2, 100
Brass industry, Austria.....	2, 375
Infant's pavilion .....	1, 100
Women's-work pavilion .....	870
German Empire exhibition pavilion .....	10, 790
Egypt, buildings of.....	1, 975
Russia, pavilion.....	300
Japanese houses .....	400
Spanish pavilion.....	300
Persian pavilion .....	225
Turkish dwelling-house, 100; bazaar, 50.....	150
Austrian agricultural department, ( <i>Ackerbau ministerium</i> ) ....	1, 800
Austrian Lloyds .....	300
Austrian gymnasium .....	200
Austrian marine exhibition .....	300
Austrian savings-bank.....	200
Marine exhibition, Trieste .....	100
Forestry exhibitions.....	1, 200
Fishery, Sweden, 300; Norway, 100.....	400
Brick-making machines and ice-machines .....	1, 250
Repairing shop .....	350
Engine, Prague joint-stock company.....	670
Light-house, Paul & Co.....	25
Stained glass, building for .....	400
Gas-works, English.....	150
House of Schubert .....	150
Italian buffet .....	150
Morocco villa .....	30
Gothic mausoleum .....	30
Chime of bells .....	155
Hilger's bells.....	20

	Square meters.
Mineral waters, pavilion, Austrian . . . . .	50
Garden-house . . . . .	80
Iron goods, furniture, kiosks, &c . . . . .	245
Iron house and iron chapel . . . . .	500
Ticket burean, iron, (Wagner) . . . . .	20
Building-yard . . . . .	1, 000
Building-stone, Dohlgoff . . . . .	25
Building-stone, Freund . . . . .	25
Summer-house, flowers, Haslinger . . . . .	25
Danube Steamboat Company's pavilion . . . . .	400
Dreher's (Austrian) brewery pavilion . . . . .	100
Palm-house, iron and glass, by Wagner . . . . .	200
Photograph association, (Vienna) . . . . .	120
"Circle Oriental" . . . . .	250
Pavilion, Prince of Saxe-Coburg . . . . .	225
Pavilion, Prince Schwarzenberg . . . . .	450
Pavilion, Prince of Monaco . . . . .	60
Pavilion, Achmed's fountain . . . . .	170
Pavilion garden; Sweden 25, Norway, 40 . . . . .	65
Music pavilion . . . . .	100
Maunthner's pavilion . . . . .	100
Mining industry, Group I, Karinthia . . . . .	700
Mining industry, Group I, Stiermark . . . . .	
Mining industry, Group I, Innerberger . . . . .	150
Mining industry, Group I, Vorderberg . . . . .	700
Bohemian coal industry . . . . .	60
States Railway Company . . . . .	350
North Railway Company, (station, &c.) . . . . .	850
South Railway Company pavilion . . . . .	20
New Free Press, (Vienna) . . . . .	450
Heller's music-box pavilion . . . . .	225
Northern Ocean, polar products, (Sideroff) . . . . .	80
Newschloss parquetry pavilion . . . . .	100
Prince Pittel, model stable . . . . .	50
Wagner, model stables . . . . .	
Money pavilion . . . . .	30
Patent Cork Company . . . . .	10
Stone-sawing machine . . . . .	80
Staling's roofing . . . . .	40
Tobacco and cigar stand . . . . .	50
Office for sale of opera and theater tickets . . . . .	25
Asphaltum exhibition, Kosch . . . . .	25
Clay goods, Chemical Ware Company . . . . .	320
Wienerberger Ziegel's fabric, brick, terra cotta, and triumphal arch . . . . .	120
Vieille Montagne Zinc Company . . . . .	25
Telegraph Company, signal-office . . . . .	20
Water-tower, 100; water-works, 560 . . . . .	660
Wash-house, English . . . . .	40
Windmill, Fischer's . . . . .	25
Portable dwelling-house, Kien's . . . . .	55
Agricultural Company . . . . .	50
Dynamometer, &c . . . . .	210
Steel bridge, (Rothschild) . . . . .	75
Steel bridge Piernasky, (not covered) . . . . .	
Steel bridge, Swedish . . . . .	



	Square meters.
Bridg and road construction company .....	200
Book-store .....	100
Cement-building, Portland cement .....	40
Cement-building, Cailly .....	25
Cement, Lissbauer .....	30
Cement-goods, Perlmoser .....	100
Asphalt-pavement pavilion .....	50
Presburgh exhibition .....	50
Pumps and syringes, Meunk & Co. ....	50
Pump-house, Meunk & Co. ....	50
Bureau for information to travelers .....	25
Cook & Son, excursion-tickets and tourists' tickets .....	60
Gaze & Son, tourists' tickets .....	
Aveling & Porter's traction engines .....	
Saw-mill, Steffen's .....	100
State exhibition, J. Liebig .....	30
Exhibition Austro-Silesian Company .....	50
Swedish " hunting-box " .....	150
Swedish military (ordnance) pavilion .....	350
Garden summer-house, Sweden .....	25
Olderhausen's fire-extinguishers .....	35
Railway exhibition, (sheds) .....	1270
Baking establishment .....	865

*Farmers' or peasants' houses.*

Herdsmen's cottage, Austria, .....	100
Herdsmen's cottage, Salzburg .....	120
Alsace .....	500
Galitzia .....	50
Kroatia .....	150
Roumania .....	50
Russia .....	350
Saxony .....	125
Hungary .....	75
Voralberg .....	150
English workman's dwelling house, iron .....	40

*Restaurant and refreshment-saloons.*

American, No. 1, 300; No. 2, 220; No. 106, 600 .....	1, 120
Great Britain .....	300
France, <i>Freres Provenceaux</i> .....	600
Tampier .....	20
Austria, Liesinger .....	1, 250
Pilsner .....	350
Pilsner Company .....	500
	<hr/>
	2, 100
Sacher .....	450
Trieste .....	370
Hungarian .....	150
Vienna bakery .....	50
Vienna .....	80
Styrian wine-house .....	120
Carinthia beer hall .....	
Silberegger's .....	250
	<hr/>
	1, 4

	Square meters.
Italy .....	750
Russian .....	200
Sweden .....	200
Switzerland, (coffee, &c) .....	300
Hamburg .....	180
Turkish coffee-house .....	150
Circle Oriental.....	250
Tasting-hall, international ....	600
Alsace, Reasaut house.....	70
Spain wine-production, &c.....	40
Oldenbergh .....	10
Glockes .....	70
Wigwam, (United States)....	60

*School-houses.*

United States .....	80
Austria .....	150
Portugal .....	115
Sweden .....	160

*Boiler-houses.*

American, United States.....	100
Austrian .....	300
Belgium.....	170
France .....	200
German Empire.....	300
Great Britain.....	300
Switzerland .....	150
Fountain and hydraulic .....	200
"Down Preis" .....	200

ALLOTMENT OF SPACE.

The partition of space among the various participating countries in great exhibitions is one of the most important questions connected with such enterprises. Not only the population, resources, and industrial activity of the country are to be considered, but also their geographical position and commercial relations. Each new exhibition held in a new locality presents a different scheme of distribution. The country in which the exhibition is made of course takes the greatest portion of space, and this portion is the central attraction, usually, in such displays. The subject is of great importance in the inception of all exhibition enterprises, for the architects and engineers of the plan cannot wait for the ultimate announcement from each nation of the space they will require. The wants of the nation in this regard must be anticipated in a general way. A comparative study of what has been allotted to and occupied by the various countries in previous exhibitions is thus important to those who project and conduct a great exhibition. I, therefore, introduce here the latest figures in regard to the space allotted to the several nations, and refer for comparison to the statements of the space occupied in Paris in 1867, page 136,



TABLE showing the space in square meters allotted to each country in the industrial, machinery, and agricultural halls.

Country.	Industrial hall.	Covered courts.	Open courts.	Machinery-hall.	Agricultural hall.
Austria.....	14,767	25,700	.....	11,000	
Germany .....	6,714	2,570	.....	10,000	
France.....	6,308	5,140	.....	5,580	2,500
England .....	6,396	1,300	.....	5,305	4,500
Russia .....	3,319	1,028	.....	1,250	.....
Hungary .....	2,972	1,302.45	.....	350	.....
Italy .....	2,972	2,240	.....	950	950
Turkey.....	2,938	.....	.....	.....	.....
Belgium.....	2,613	428.66	.....	3,000	356
China, Siam, and Japan.....	1,350	1,285	.....	.....	.....
United States .....	1,900	2,570	.....	1,250	115
Switzerland.....	1,125	1,714	.....	3,049	475
South America.....	1,090	.....	.....	.....	.....
Egypt and Middle Africa.....	1,003	.....	.....	.....	.....
Holland.....	880	428.66	.....	240	.....
Greece.....	867	.....	.....	.....	.....
Sweden and Norway.....	865	.....	.....	280	260
Roumania.....	657	.....	.....	.....	.....
Spain .....	605	.....	.....	.....	640
Portugal.....	519	.....	.....	.....	350
Persia and Middle Asia.....	346	.....	.....	.....	.....
Tunis.....	259	.....	.....	.....	.....
Morocco .....	86	.....	.....	.....	.....
Denmark.....	.....	1,712.68	.....	300	170

The objects in the main building were grouped chiefly along the medial portions of the main transept and of the galleries. This left two principal passage-ways, one on each side along the transept and the galleries, but there was in general ample space for circulation between the show-cases in the center, with here and there alcoves and subordinate passage-ways, as notably in the French section, where the exhibitors combined together and erected continuous stalls, separated one from the other by simple partitions. These being closed on three sides gave them not only counter or table space, but wall-surface for decoration and the display of their goods.

The breadth of the annular spaces assigned to the groups at the Paris Exposition of 1867 was determined upon after a careful consideration of what was required at previous great exhibitions. These breadths were, including the galleries or passage-ways, as follows, measured in the line of the radius of the elliptical building:

	Meters.
Interior promenade.....	5.65
Gallery of the history of labor .....	8.50
Fine-art gallery .....	15.
Apparatus and application of the liberal arts.....	6.
Gallery or passage-way.....	5.
Apparatus and application of the liberal arts, Group II, together with a portion of Group III, furniture, decorative objects, &c.	23.
Gallery or passage-way.....	5.

	Meters.
Furniture, &c., with Group IV, clothing, and objects worn upon the person.....	23.
Gallery or passage-way.....	5.
Portion of Group IV, together with Group V. Raw material..	23.
Group VI. Machines and processes, &c., together with two passage-ways.....	35.
Group VII. Food, &c.....	10.
Exterior promenade.....	5.
Total.....	169. 15

If we add to this the radius of the central garden, 20<sup>m</sup>.85, we have 190 meters as the radius of the circular part of the building.

The aggregate area of the principal passage-ways, including the radial avenues, was 10,328 square meters.

The area of the many subordinate passage-ways, from 1 to 5 meters in width, if added, would give a much larger sum.

## V.—THE BUILDINGS.

For details of construction, the architecture, decoration, &c., reference may be made to the special report of Mr. Pettit, the engineer charged with this duty. There are some points in addition to which attention should be directed in view of the selection of a design for the exhibition-buildings of 1876. The following extracts from my dispatches of April and May, 1873, convey the impressions first made and will serve to introduce some of the details to be considered:

1. The provision of space in the building, for most of the countries, was inadequate.
2. The form of building adopted is a very costly one, and the building does not permit of being enlarged by the extension of any of its parts.

3. Increase of space can only be obtained by supplemental structures out of harmony with the original design.

4. The costly dome is not an impressive feature from the exterior. It looks low and "squat," appearing to be imbedded in the roof of the court about it.

5. The structure is not fire-proof; the flooring is of pine boards, with open joints, and the iron columns are boxed in with boards. A fire once started in the flooring, and especially near hollow walls or about the columns, would be difficult to control.

That the space originally provided was inadequate is sufficiently shown by the fact that for most of the countries it has been necessary to obtain greater accommodations by roofing-in the courts or spaces between the transepts. This has been done, for example, by the United States commission. The court adjoining the western transept has been roofed over and floored at an expense of \$30,000. This was done by contract with a French company, who undertook a similar work for the French commission in the court adjoining the space allotted to France. The British commission now contemplate roofing over the court opposite to ours. Other countries have added covered courts, and indeed it is probable that, if time permitted, all the open courts would be closed up and covered with roofs, thus becoming practically portions of the main building, and converting it into a great rectangular structure. These covered courts are, however, just so many supplemental buildings, and of necessity are out of harmony with the original design. They impair the beauty, if there was any, of the primary structure. They are not only built in a variety of ways with façades and decorations in strong contrast with the fronts of the transepts, but some are not so large as others, and in the Swiss court a beautiful Swiss chateau is erected. The unity of design of the original building is in this way destroyed, and the expensive exterior mural cornices and decorations are not only useless, but they are really in the way of the supplemental work. Besides all this, it becomes necessary to secure proper entrances from the main building to these covered courts; and doorways have to be opened through the walls at very considerable cost and at great inconvenience to the work of installation. Installation is not only delayed by these radical changes, but the allotment of space has to be revised, and, as is now the case, the dust and dirt of tearing down a masonry-wall prevents opening any fine goods in the neighborhood. There are other serious evils in a building like this entailed by any departure from the original plan, and we should take heed to the lessons now taught us at this exhibition, and either provide beforehand accommodations that will in all events be ample, or secure such a plan as may



permit of the extension of the buildings in the same style of construction, in case unforeseen conditions require it.

It became necessary not only to secure additional space for the United States in the "industry palace," but in the machinery-hall and for our agricultural machinery. The additions made for the United States to the machinery-hall cost 12,000 florins (\$6,000) by contract, and in this case, as also in the contract for roofing over the court, the materials at the close of the exhibition belong to the contractors.

Not only the extent of space required in the building, but the cost of the building, appear to have been underestimated.

#### PROGRESS OF THE CONSTRUCTION.

The progress of the construction of the buildings, from the erection of the first scaffolding up to the present date, (April 15,) is very instructively shown by a series of photographs, taken at intervals, by the Photographic Association. A complete set of them will be forwarded to you, and I refer to them for many details which cannot readily be described. I have, however, obtained two of the latest and most general views of the buildings, showing the condition of the exterior of the dome on the 19th day of last month, (March 19.) The annular court to which I have made reference is here distinctly shown, the curved roof being seen at the base of the dome.

I would here direct attention to the expensive and elaborate decoration of the exterior of the buildings. It is true that the materials are cheap and that the decoration is not permanent, but it suggests a serious question for the commission to decide. Shall our buildings in 1876 be subordinated to the exhibition of the products of the country and of industry generally, or shall the buildings form a part of the exhibition? If we subordinate all construction to the simple protection of the objects from the weather, the cost will be much less than otherwise, and it is at least possible that the attention of the world will be more fully concentrated upon the evidences of our national wealth and prosperity than if we had ornamental buildings. For a permanent building the case is different. In such a structure we may and should show fully our skill and taste in construction.

Most of the ornaments in relief about this Vienna building are cast in plaster upon a loose netting of hempen cloth, which serves to strengthen the cast and does away with the necessity of having much weight of material.

The second photograph gives a perspective view of the whole range of buildings, including the machinery-hall in the rear. This view was taken on the 7th day of March last, (No. 58. General view from the southeast.) It gives a very good idea of the present general condition of the exterior, except that there is now a heavier staging about the lantern of the dome, for the purpose of fixing there the huge gilded crown, and that the foreground is now incumbered with trains of cars and boxes of merchandise. Many supplemental structures have also been erected.

The land for the exhibition was obtained from the Emperor without expense. The whole exhibition-space is now inclosed by cheap and apparently temporary board fences, so that the public are excluded from the grounds about the building, including the outside constructions and gardens. At present but few persons except those engaged upon the work, or officially connected with it, are allowed inside of the inclosure.

The building is by no means complete. A part of the scaffolding remains about the dome and the main entrance. The huge gilded crown, which is to surmount the dome, has just been raised to its place. Inside of the dome the decoration is not yet half complete, and not one-fourth part of the flooring is laid. This is the least complete part of the building, and although it may perhaps be completed before the opening day, it certainly will not be in season to permit of the reception and proper installation of articles. It is very doubtful whether any portion of the exhibition will be in complete order by the first of May. The work is everywhere behindhand, and though the ceremony of opening may take place upon the appointed day, it will take one month longer to get the exhibition in good order.

My first impressions were that all the preparations were at least two months behindhand. It certainly would be greatly to the advantage of the exhibition if, on the 15th of February last, the work had been as far advanced as it now is. The buildings should have been completed at the commencement of winter, leaving only portions of the interior decoration to proceed simultaneously, if necessary, with preparations for the installation. The winter has been exceedingly favorable for the work of construction. There has not been any severely cold weather, and but very little snow. Had it been otherwise, the building would probably not have been ready at this time for the reception of goods.

The price of labor, it is said, has nearly doubled here since the work commenced. Extensive public improvements have been made at the same time, and now the price of labor is about three florins a day, or about \$1.50. One reason for the scarcity of laborers, especially of skilled artisans, may be found in the fact that the flower of the young men of the country are impressed into the army, some 500,000 being in this way withdrawn from productive industry. For a long time over 5,000 men were employed upon the



constructions. From the very first a company of government engineers was placed under the orders of the director, and rendered important service.

The ornamentation of the grounds is now progressing. Trees, especially evergreens, are being set out in the plats, and along the roads and paths. Depressions are being filled in with soil, and quantities of debris are being carted away. It is a scene of great activity and exertion. On every side partly finished structures are to be seen, with piles of lumber and materials about; all kinds of work are going on simultaneously, and in the midst of it all the goods come pouring in from all parts of the world. The administration is hurried and overworked. Assistance of the proper kind cannot be procured; laborers demand twice or three times as much as they usually receive, and the wonder is that order can be so soon evoked from such discordant and unfavorable conditions.

One great lesson which each succeeding international exhibition has taught is here repeated—want of time. Not enough time was allowed for the construction of the building and its decoration. It should have been finished before the installation of the objects commenced. A part of this delay and confusion results, however, from the erection of additions and making alterations. The exhibitors, as usual, have been tardy. They did not come forward in good season and have their products ready to send at the appointed time. This deranges all of the work, and impairs the success of the exhibition. It is an element beyond the control of the administration, and the only remedy—a rigid adherence to the regulations excluding all objects not entered and shipped by the specified date—is too ungracious and exclusive to be adopted. Criticism or complaint from American exhibitors or American citizens in regard to the delay in the building or installation would come with a very bad grace at this time, when our products have only just reached the country, and cannot possibly be placed in good order before the first day of May.

Much may be accomplished in the remaining two weeks, and in some portions of the building order and beauty may be secured. No delay or postponement of the opening ceremony is contemplated. A recent official order says the opening will positively take place at noon on the appointed day. The great rotunda will be vacant, and is to be the place of the ceremony. It will be decorated with the flags of the participating nations. The Emperor, the Empress, the court and the military are to be present. Music is to form a prominent feature of the occasion. National airs are to be played by the united bands.

The Emperor and Empress will walk through the principal parts of the building and greet the commissioners from the several countries in succession, as the portions of the building assigned to those countries are reached.

After this ceremony the work of unpacking and arranging must proceed rapidly, but will be embarrassed by the influx of visitors. It is hoped that all will be in order before the international jury commences its labors, and that we shall not see at this exhibition examinations made of objects before they are fairly unpacked and out of the cases, as at the Paris Exposition of 1867.

#### CITY IMPROVEMENTS.

In anticipation of the great influx of visitors during the exhibition, the city of Vienna has made many extensive and costly improvements, which will be of permanent value to the community, and may be regarded as one of the great benefits flowing from or induced by the exhibition enterprise. The new and broad avenues, which take the place of the old fortifications and moat encircling the city, are lined with costly fire-proof buildings, apparently of stone, but built chiefly of brick and stucco. Open parks and gardens are left at intervals.

Private capital has been largely invested in new hotels and apartment-houses, so that there will not be any lack of accommodations for strangers.

More than ten new hotels of great size are nearly completed. In addition to these greatly increased hotel accommodations, the residents of the city very generally intend to go into the country, and to rent their apartments at a good price to strangers for the entire season.

VIENNA, AUSTRIA, *May 20, 1873.*

For most of the time since my last letter the weather has been cold and wet, and unfavorable to the success of the exposition. The daily receipts were seriously affected; the number of paying visitors diminishing on one day to about 1,000 only. On Sunday last, the 18th of May, the weather was exceptionally pleasant, and it being also the cheap or half-florin day, the exposition was crowded. The total number of visitors was 50,521, of whom 39,142 paid 50 krentzers each, and the others were either exhibitors or the holders of weekly tickets. This is the best illustration that can be given of the influence of the weather and the price upon the attendance.



For the purpose of ascertaining the capacity of the exhibition-building and of the various passage-ways and entrances when occupied by the greatest number of visitors, I went there both in the morning and in the afternoon, and made careful observations in regard to these points.

I found, as might be expected, of the total number of visitors, a very large portion in the grounds and gardens outside of the industrial palace. The restaurants and beer-halls were crowded, and thousands were walking about enjoying the sight of the many novel objects and constructions on all sides.

The palace was crowded; in many places progress was obstructed, and in such places it was inconvenient, if not impossible, for any one to stop to examine any object carefully. This was particularly the case around the groups of statuary, which always arrest the attention of the greatest number, and hence should always have a wide open space around them.

The main hall, or longitudinal building, and the rotunda were the most crowded, the people concentrating there and not distributing themselves equally over the whole space, including the transepts and covered courts. The tendency is to keep with the crowd, and the crowd always gravitates to the main halls and passage-ways. This is true generally. I have noted it constantly since the opening, upon all occasions. This generalization should be kept in mind in designing our building. People gravitate to exhibitions, not only to see the objects displayed, but to see each other—to see the crowd and to be in it. This being the case, broad avenues or promenades should constitute a feature of exhibition-buildings.

The unusually crowded state of the building developed a defect which before had not been very prominently shown. The dust was very great; the whole atmosphere was filled with it, and it settled constantly over all the objects, and even penetrated the cases, except those of the very best and almost air-tight construction. The dust was impalpable, but heavy, and probably proceeded from the lime and plaster ground into the floor-boards during the progress of the construction. It is the custom to keep the flooring constantly damp by sprinkling, but this can be done only when the floor is not crowded.

The building was also rather warm, and the ventilation was not perfect, but this perhaps was susceptible of being remedied, and may be when the weather becomes settled.

Without regard to the comfort and convenience of visitors, broad avenues and long vistas are desirable for their aesthetic effects. They render an exhibition much more attractive and beautiful. No one can ever forget the charm of the long vista of the crystal palace at Sydenham. It is alone worth a visit to the exhibition. Here in Vienna there is no such vista; no long, unbroken view; no point from which a general view can be had. When the building was vacant the views were good and the decoration was effective; but now all general views are destroyed by the show-cases, most of them of unusual height and size, which fill the center of the hall, leaving a passage-way upon each side. The rotunda upon the day of the opening, when free of show-cases, was grand in its appearance, and showed itself to be well suited to such displays and to musical performances. The acoustic effects were good, but now that great distinguishing feature of this exhibition is crowded by show-cases of all styles, forms, and sizes, and the grand effect is lost. It would have been a great attraction as a concert hall where musical performances should have followed in rapid succession. This, as I have before mentioned, was the intention at least to have concerts for an hour or two in the afternoon, but the work of installation has prevented.

You are aware that in the Paris Exhibition there were great complaints of damage to goods, caused by the leaking of the skylights. In this building all such difficulties are sought to be avoided by making an unbroken roof and lighting by side windows. The rainy weather that we have had has shown that, notwithstanding all the care, there are many leaks, and much damage has resulted from them. The dome leaked in many places, as shown by the stains on the canvas lining. In the covered courts where a part of the lighting is by glazed sashes in the side roofs, the leakage was very great, and water came down in streams. These difficulties show the importance of having the building for an exhibition completed long before the installation of the goods commences. In fact, experience speaks loudly in favor of having an exhibition building completed one season in advance of the opening. In our case, in Philadelphia, in 1876, the buildings should be finished at least before frost in 1875. At neither of the great international exhibitions yet held has sufficient time been allowed for installation.

#### MACHINERY-HALL.

The machinery-hall, though nominally open, is almost impassable, and will not be ready for visitors before June 1. I am glad to say that, thanks to the energy and experience of Mr. Pickering, the United States portion is as far advanced as many others, and that the machinery will probably be put in motion by the first day of June. Our country is also creditably represented by many machines of great value, and first class



in design and workmanship. Indeed, it seems probable that, for the rigid exactness and efficiency of our machines, we shall not be excelled. Messrs. Sellers & Co. have sent some important machines which will fully sustain the prestige of the firm acquired at the Paris Exhibition in 1867.

#### AGRICULTURAL HALL.

The agricultural machines and implements are arranged in buildings by themselves between the industrial palace and the machinery-hall. This you will see by reference to the plans which have been sent forward.

Our contributions are already partly in place, and the remainder have just arrived by the "Guard," and will be installed in a few days. The display will be creditable, and the space is ample. A separate building was erected for the United States just in the rear of the part of the main hall assigned to Great Britain. The display in the main hall is unusually large and complete; indeed, it is probably the finest display in quantity and value of agricultural machines ever made. It includes, however, many portable engines, road-engines, and some fixed engines, either of which may or may not be used for agricultural purposes.

Although a very attractive and valuable display, there are but comparatively few visitors; and the same may be said of the machinery-hall. An explanation of this is found in the fact that these buildings are disconnected and apart from the main portion of the exhibition—the industrial palace. The industrial palace, with its treasures, is the chief attraction, and those who reach it find enough there to exhaust their time and strength. I seriously question the expediency of breaking up an exhibition in this way. Compactness and concentration are essential features. A series of detached buildings will not give satisfactory results. All the objects to be shown should be brought into as close contiguity as possible, without interference, and so as to show their mutual inter-dependence and relations. The result would not only be much more instructive and entertaining to the public, but would be much more satisfactory to exhibitors than where separate exhibitions are made.

An exception may be made for the fine arts, or much may be said in favor of a separate building for their display. Painting and sculpture require peculiar conditions of light and space, differing from most other objects.

The art-building here is a separate one, and was formally opened on the 16th. It seems to be well arranged and well adapted to its purposes in every respect. The plans and elevations have already been forwarded to you.

#### DISPLAY OF FLOWERS.

The first of the series of exhibitions of flowers has just closed. It consisted chiefly of azalias and rhododendrons growing in pots. They were tastefully grouped in masses upon the ground within a long shed-like tent, and were remarkable chiefly for the dense masses of blossoms in dome-shaped heads, formed by the close trimming of the plants.

There is a notable absence here of large and attractive conservatories and green-houses, such as formed a prominent feature of the exhibition of 1867.\*

The buildings, of all descriptions and styles of architecture, which are erected or erecting in the exhibition-grounds, number not less than 148. I inclose a list of them.

JUNE 25.—The second exhibition of flowers is now open, and adds very much to the attractions of the Prater. I forward the official catalogue, which will show to all who are interested in such matters exactly what the exhibition is.

I again direct attention to the cheapness of the building or covering for the floral displays. It is merely a slight frame of wood supporting a linen covering. There is no flooring—only graveled earth or walks between flower-beds. In fact, it is a garden covered with a tent.

The palm-house has been filled with palms. There are no basins for aquatic plants, or houses specially for *cactacea*, and for orchids, as at Paris in 1867.

There may be said to have been three classes of buildings, of which the industrial palace, the agricultural halls, and the machinery-hall were the leading examples. The first includes the industrial palace, the art-buildings, the imperial pavilion, and the jury-pavilion—all of them ornate and more or less permanent in their character. The materials used were chiefly masonry, stucco, iron, wood, and glass. In the second class the constructions were of wood, and were cheaply though effectively decorated. The third class, of which the machinery-hall is the chief example, was more permanent and unpretending, being built of masonry

---

\* A palm-house of iron and glass was subsequently completed.



with a simple pitch-roof. The frame buildings were the cheapest, and in general constructed of rough boards and timber frame, all colored by a tinted lime-wash. Many of the smaller pavilions consisted of frames filled in with brick. The covered ways and the entrance-gates were light structures of wood, highly decorated and adorned with climbing-vines, the Virginia creeper being the most common.

#### THE INDUSTRIAL PALACE.

The gridiron plan of the building, with its many cross-galleries, and constant repetition of side walls and principal angles, made it unusually costly relatively to the area covered in. The length of the walls is very great compared with the area of floor inclosed. A careful measurement shows that the total length of the outer walls of the industry palace was nearly 8,000 meters, this being much greater than the entire length of the fence around the whole tract, and without including the added walls at the ends of the courts afterwards roofed over. An equal area of floor could have been inclosed with 2,250 meters in length of wall.

There are twenty-eight arms, or galleries, to the building, fourteen on each side of the transept, the walls of each of which measure 75 by 75 by 15 meters. There are, in addition, the walls around the gardens in each angle of the quadrilateral about the rotunda.

The form also necessitated a great many angles in the walls, adding largely to the cost. There were no less than 136 principal angles, including the intersections of the walls about the rotunda, and not counting any of the angles made by the projection of the main porticos or introduced for ornament. Four principal angles would have served the same purpose if the galleries had been dispensed with and a simple quadrilateral plan had been adopted. In the end, as we have seen, by the addition of covered courts the ground outline became approximately quadrilateral.

The construction of such a building, with so many angles and such a great length of wall, is indefensible on the plea that the wall-space is required by exhibitors. Most exhibitors prefer show-cases that stand out from the wall. Wall-cases may be placed back to back where no walls exist. Inside walls or partitions can be built where required to suit the necessities of any exhibitor. An open, free floor-space over the whole area, unobstructed by walls, is far better than such a construction as the Vienna building. When the courts were roofed over, the walls were in the way and prevented free movement of the visitors, so that the tide of people always flowed in the main transept.

#### THE COST OF THE BUILDINGS AND ACCESSORIES.

The annexed tabular statement of the expenditures for the exposition by the Austrian commission, chiefly for the buildings, was obtained in June last and transmitted in the dispatch of the 18th of that month. The sums are, in some cases, approximate, and may vary somewhat from the final official report after all of the accounts have been revised and settled. In the case of the jury pavilion, for example, a careful revision has reduced the amount to 141,413 florins.

##### *Cost of the buildings, (approximate.)*

	Florins.
Industry palace, including the rotunda and half-gallery .....	6, 289, 018
Machinery-hall .....	951, 448
Agricultural hall .....	670, 000
Art-hall or art-building .....	742, 000
Pavilion des amateurs .....	122, 600



	Florins.
Imperial pavilion.....	20,000
Covering in the courts.....	580,000
Jury pavilion.....	144,000
Office-buildings.....	75,042
Postal, telegraph, and custom-house buildings.....	53,477
Six guard-houses.....	34,989
Ten smaller guard-houses.....	40,904
Barracks for infantry.....	64,500
Barracks for cavalry.....	14,979
Sutler's house.....	8,700
Fences and covered corridors.....	292,000
Aqueducts, water-service, and water-tower.....	340,000
Boilers, shafting, supports, &c.....	603,400
Temporary or provisional buildings.....	15,000
Expenses for the building-office.....	345,000
Preparatory work for the building-office.....	40,000
Requisites for the building-office.....	12,000
Raising the rotunda.....	22,800
Drainage and water-closets.....	147,000
Basins.....	25,000
Telegraph and gas.....	36,800
New annexes.....	500,000
Grading, garden-work, railway, &c.....	369,479
Avenues, roads, paths.....	748,931
Sanitary service.....	4,681
Cashier's office.....	4,314
Redemption of ground-concessions.....	12,156
Sundries.....	69,366
Central administration.....	1,553,000
Bricks, (difference in cost of,).....	95,000
Reserve fund.....	352,416
Total in Vienna florins.....	15,700,000
Total in dollars, approximately.....	\$7,850,000

#### THE COST PER ACRE OF THE BUILDING.

The total area of the industry palace was 78,328 square meters, or 19.35 acres. Taking the cost as estimated, about \$3,150,000 for the whole, the cost per square meter was about \$40.21, and, per acre, \$163,000, in round numbers.

The covered courts afterward put up by contract cost about the same as paid for the United States court; this was \$30,000 per 2,570 square meters of floor-area. The whole area of the courts being 47,619 square meters, or 11.76 acres, the total cost on the above basis was \$555,713, or \$47,254 per acre, or \$11.67 per square meter. These courts did not require side-walls; the walls of the cross-galleries inclosed them; yet, notwithstanding this advantage, the difference of cost between the courts and the main building is surprising.

The cost of the machine-hall, taking its area at 8.73 acres, and the total expense at \$475,724,\* was \$54,500 per acre. The cost of the agricultural halls at 7 acres, and the sum at 670,000 florins = \$335,000, was \$47,857 per acre.

The rotunda, according to Scott Russell, the designer and engineer, cost only 2½ pence, about 5 cents, per cubic foot, very much less than any dome.† The total cost is said to have been about \$500,000.

Its extraordinary dimensions, compared with some of the largest domes of the world, are well illustrated by the annexed outlines drawn

\* This and the figures for the agricultural hall are approximate only. The final statement had not been made at the time I left Vienna.—W. P. B.

† As compared with the usual cost of other constructions in Great Britain, the following will be interesting. The average cost per cubic foot is estimated at 1s. for dwellings; 6d. for common or ordinary house; 3d. for a shed or shop; 2½d. the cost of the rotunda.



to the same scale. The dimensions of these principal domes are as follows :

*Comparative sizes—diameters.*

	Feet.
Rotunda of the Vienna Universal Exhibition .....	354. 83
London International Exhibition, dome, 1862.....	159. 93
Dome of St. Peter's, Rome.....	156. 88
Dome of St. Paul's, London.....	111. 94

The height of the rotunda to the top of the cross is 280 feet ; the height of the sustaining-walls, 80 feet ; and to the apex of the cone, if developed, 182 feet.

BOILER-HOUSES.

Seven small boiler-houses built of brick below ground and of open frame-work of wood above, filled in with brick, cost 26,298 florins, averaging about 3,759 florins each, or about \$1,880.

THE IMPERIAL PAVILION.

The beautiful pavilion for the use of the Emperor was a present to him from the artisans, each trade having contributed a sample of its best work. Most of the work was done by the builders, decorators, and furnishing-houses who participated in the exhibition. The chief expense to the commission was for the architect's design and drawings. It consisted of four main saloons and a wide vestibule, which was exquisitely paved in mosaic. The saloons were respectively for the Emperor, the Empress, the archdukes and the archduchesses.

The decoration was executed under the direction of Professor Störck. The walls of the saloon of the Empress were hung with blue and gold, and the ceiling and doors were worked in colors and arabesque. In the center of the ceiling there was a shield painted on blue satin, by Freidrich Sturm, who composed and directed the paintings on the wood. The rest of the ceiling was decorated by Ignatz Schönbrunner. The stove was of white Carrara marble, by Francini ; the mirror by Lobmeyer, and the piano by Börsenderfer ; the lace-curtains were from the establishment of Iaber & Co., and the chairs and sofa from Haas. The seats were covered with blue and gold embroidery, worked in the convent of the Daughters of the Redeemer.

COST OF THE PARIS EXPOSITION BUILDING.

The cost of the French building, Paris, 1867, was 11,783,024 francs, or 76 francs 81 centimes per square meter. This total expenditure was distributed as follows :\*

	Francs.	Per meter, francs.
Grading, masonry, carpentry.....	1, 854, 768. 23	12. 10
Iron-work.....	1, 970, 799. 08	52. 02
Roofing, zinc-covering, glazing .....	874, 070. 81	5. 70
Painting and decoration .....	567, 890. 89	3. 71
Flooring, pavements, doors, and miscellaneous.....	205, 697. 34	1. 34
Superintendence and general expenses.....	309, 798. 58	1. 94
Totals.....	11, 783, 024. 93	76. 81

Calculating upon a total area of 153,138 square meters, this is equivalent to about \$15.36 per meter, or \$62,000 per acre.

\* *Vide* Report of the Imperial Commission, p. 39.

The cost of the New York Crystal Palace building in 1853, covering  $5\frac{3}{4}$  acres of floor-space, was about \$200,000, or \$34,782 per acre.\* This includes the gallery-floor space, by which the superficial cost is much less than it would be if calculated upon the ground area alone.

#### THE MATERIALS OF THE VIENNA BUILDING.

Almost all materials generally used in building were laid under contribution for the structure. Wood, iron, glass, zinc, plaster, and jute were the principal. The floor, of thick boards or plank about 8 inches wide, was laid upon the open system, giving not only spaces for the dirt to fall through, but for the entrance of air. It was badly constructed. The planks were unequal in thickness, and the edges were truncated so as to partially remedy the fault, but this had the disadvantage of making an uneven surface to walk upon, and also a very disagreeable surface to ride over in the chairs mounted on wheels. These chairs made a great noise in passing over the spaces, and the sensation to those using them must have been something like that felt when driving over a corduroy road. This defect in such floors could be avoided by reducing the floor-plank to one uniform thickness in a planing-machine, by avoiding the chamfer, and by diminishing the space to three-eighths or half of an inch.

Other objections to such an open floor are the constant catching in the cracks of canes, parasols, and umbrellas, thousands, perhaps, being broken during the season; the loss of money and jewelry through the cracks; the greater danger of fire, and the cold draughts of air which make such floors very disagreeable to stand on for a long time.

It is very desirable, if possible, to have a floor which will not give rise to much dust. To allay the dust at Vienna constant sprinkling was required, much to the annoyance and discomfort of visitors, and the destruction of ladies' clothing. An absorbent floor, one that would hold moisture without being wet on the surface, would probably be the best, but it should not be cold. Concrete or asphaltum would perhaps answer the purpose. Some of the exhibitors, especially in the French section along the main transept, and in the United States section, had cocoa-matting laid down to cover the irregularities of the floor and make it more tolerable to walk on. This matting, toward the end of the season, became so much worn and so musty, in consequence of the sprinkling, that it had to be removed. In the British art-gallery, also, the unevenness of the floor and the discomfort caused by the cold draughts from below were remedied in part by laying down strips of carpeting.

In the Paris Exposition building the passage-ways, promenades, and avenues were laid with *béton*, leaving the spaces devoted to exhibitors to be covered by them as they liked best, either by flooring or by platform. At Vienna the exhibitors from the United States generally preferred to build platforms over the floor, thus raising their goods above the general level, making them more conspicuous and elegant in appearance. Two floors were thus laid where one would have sufficed.

#### VI.—TRANSPORTATION OF PASSENGERS AND GOODS.

In consequence of the negotiations by the general director of the exhibition, and in accordance with the eleventh paragraph of the

---

\* *Vide* for other details the Address by the Author on Great International Expositions, &c., pp. 6, 7.



general regulations for the exhibitors of the Austro-Hungarian monarchy, and paragraph 9 of the general regulations for foreign exhibitors and commissions, reduced rates of fares, ranging from 25 per cent. to 50 per cent., were accorded by most of the railway and steam navigation companies leading to Vienna. The names of these companies were announced provisionally, in full, in programme No. 47, together with specific charges at reduced rates for certain classes of goods and of farm produce. Still further concessions were stated in a later programme, No. 59, dated July 1, 1872, which was succeeded by a third and more complete statement, No. 64, dated October 31, 1872. Inasmuch as this official circular contains many explanatory details and data of practical importance, it is presented entire :

No. 64.]            UNIVERSAL EXHIBITION OF 1873 IN VIENNA.

*Reduction of fares for goods and passenger traffic by railway and steamer.*

THIRD PUBLICATION.\*

The reduction of fares for goods and passenger traffic by steam and rail obtained up to the 15th March last were given in programme No. 47; for those obtained up to the 30th June in programme No. 59.

In accordance with paragraph 11 of the general regulations for exhibitors of the Austro-Hungarian monarchy, and with paragraph 9 of the general regulations for foreign exhibitors, the undermentioned new series of tariff reductions having been agreed to by the respective companies are now published. The tariff reductions of those companies not yet officially notified to the chief manager will be supplementarily published.

A.—AUSTRO-HUNGARIAN RAILWAY AND STEAM NAVIGATION COMPANIES.

1. All the railway companies of the Austro-Hungarian monarchy, with the sole exception of the managers of the royal Hungarian state railways, have withdrawn their tariff reductions originally fixed and published in programme No. 47, and, in pursuance of posterior resolutions, they allow for the conveyance of exhibition-goods and live beasts on their way to the exhibition, and also on their way back to the original forwarding station if they return unsold, a reduction of 50 per cent. of the regular tariff rates by maintaining the existing goods and express-train tariffs. With reference to the ordinary goods it is provided that there shall be charged in no case a higher rate than 1 kreutzer Austrian bank value per zollcentner (50 kilograms) and German mile, inclusive of the fees of handling the goods.

Attendants accompanying live beasts will be charged half price of a third-class ticket on their journey to and fro.

As for the conveyance of passengers, it is resolved that a reduction of 50 per cent. of the fare shall be allowed to exhibitors and visitors conveyed by especially inlaid trains.

For the conveyance of victuals, the railways running into Vienna will arrange express-trains for goods according to want.

The following tariff-dues, published already in programme No. 47, March 15, 1872, are maintained unchanged, namely :

Conveyance from the Northern Railway station to the exhibition-grounds 0.7 kreutzer, silver currency, per zollcentner ;

Conveyance from the State Railway station to the exhibition-grounds, 1.2 kreutzer, silver currency, per zollcentner ;

Conveyance from the Southern Railway station to the exhibition-grounds, 1.6 kreutzer, silver currency, per zollcentner ;

Conveyance from the Western Railway station to the exhibition—

(a) Via Northern Railway, 2.5 kreutzer, silver currency, per zollcentner ;

(b) Via State Railway, 2.6 kreutzer, silver currency, per zollcentner.

2. The direction of the Royal Hungarian state railways has allowed the following fixed rates of tariff, viz :

(a) For the conveyance of goods, per goods-train, the rate of 0.8 kreutzer, silver currency, the aliquot parts of 10 pounds will be charged as 10 pounds, the minimum weight charged to be 50 pounds ;

---

\* By this third publication, the two preceding (programmes Nos. 47 and 59) are superseded.



(b) For goods, per express-train, 3.0 kreutzer, silver currency, the aliquot parts of 10 will be charged as 10 pounds, minimum rate 20 kreutzer, including incidental expenses.

(c.) For beasts, the following tariff:

Oxen, cows, bulls, and asses, irrespective of numbers, per head and mile, 12 kreutzer, silver currency.

Sucking-calves, with the cows, per head and mile, 2 kreutzer, silver currency.

Calves, without the cows, per head and mile, 6 kreutzer, silver currency.

Pigs, young and sucking, per head and mile, 1 kreutzer, silver currency.

Pigs, not fattened, per head and mile, 2 kreutzer, silver currency.

Pigs, fattened, per head and mile, 6 kreutzer, silver currency.

Lambs and kids, per head and mile, 1 kreutzer, silver currency.

Sheep, rams, goats, and he-goats, per head and mile, 2 kreutzer, silver currency.

Dogs, per head and mile, 3 kreutzer, silver currency.

Horse, foal, and mule, (single,) per head and mile, 26 kreutzer, silver currency.

Horses, foals, and mules, (in numbers,) per head and mile, 2 kreutzers, silver currency.

Poultry, in coops, according to the actual weights per zollcentner and mile, 1 kreutzer, silver currency, including incidental charges and truck cleaning.

(d.) Drivers will be charged the half fare for third-class carriages to or from the exhibition.

(e.) For vehicles, tariff rates as per normal weights of 0.8 kreutzer, silver currency, per zollcentner and mile, including booking.

(f.) For rolling-stock running on the line, the fixed rate of 0.5 kreutzer, silver currency, per zollcentner and per mile.

(g.) Exhibitors traveling in second and third class carriages will be charged the half fare to or from the exhibition.

III. The Imperial Royal Danubian Steam Navigation Company have agreed to the following reductions for exhibition goods, namely:

(a.) Upon all goods a reduction of two-thirds of the normal rate of freight.

(b.) Upon live beasts, a reduction of freight of 50 per cent.

(c.) Exhibitors traveling to or from the exhibition will be allowed a reduction of 50 per cent. off the usual rates, (express boats excepted.)

IV. The Austrian Lloyds Steam Navigation Company will allow upon goods and live beasts for the exhibition, a reduction of 50 per cent. off the tariff, and exhibitors traveling will be allowed a reduction of 50 per cent. off the tariff of first and second class fares, including express-boats.

N. B.—The boards of Austrian railway companies have decreed to put in vigor from the actual moment the reductions of tariff for exhibition-goods.

#### B.—FOREIGN TRAFFIC ARRANGEMENTS.

The boards of the following railway companies, have granted for exhibition-goods, whether they originate from the inland or from abroad, and without distinction of their being sent by goods or by express train, the concession to pay only the half of the tariff rate, which reduction is meant for the joint lines, as well as for the local service, (that is, for goods dispatched from stations outside of the joint line,)\* viz:

I. Rhenisch-Thüringian joint railway companies, namely:

1. The Berg-March Railway at Elbersfeld,
2. The Westphalian Railway at Münster,
3. The Hessian Northern Railway at Cassel,
4. The Thüringian Railway Company at Erfurt,
5. The Leipsic-Dresden Railway Company at Leipsic,
6. The Royal Saxon State Railways at Dresden;

II. The Hamburg-Berlin-Austrian joint railways, namely:

1. The Berlin-Hamburg Railway Company at Berlin,
2. The Lower Silesia and March Railway at Berlin,
3. The Upper Silesian Railway at Breslau,
4. The Leipsic-Dresden Railway Company at Leipsic,
5. The Berlin-Anhalt Railway Company at Berlin,
6. The Royal Saxon State Railways at Dresden,
7. The Lübeck-Büchen Railways at Lübeck;

III. The Stettin-Austro-Hungarian joint railways, namely:

1. The Upper Silesian Railway at Breslau,
2. The Berlin-Stettin Railway at Stettin;

IV. The Saxon-Austrian Railways via Bodenbach, namely:

1. The Magdeburg-Köthen-Halle-Leipsic Railway Company at Magdeburg,
2. The Leipsic-Dresden Railway Company at Leipsic,
3. The Royal Saxon State Railways at Dresden;

---

\* On the South-German lines eventual accessory dues, such as insurance-fees, will be charged in full.



V. The Prusso-Silesian and Austro-Hungarian Railway Companies, namely :

1. The Upper Silesian Railway at Breslau,
2. The Royal Prussian Eastern Railway at Bromberg ;

VI. The Bremerhaven-Gestemunde-Bremen-Hamburg and Austrian Railway Companies, namely :

1. The Royal Railway at Hanover,
2. The Brunswick Railway Company at Brunswick,
3. The Magdeburg-Halberstadt Railway Company at Magdeburg,
4. The Magdeburg-Leipsic Railway Company at Magdeburg,
5. The Leipsic-Dresden Railway Company at Leipsic,
6. The Royal Saxon State Railways at Dresden ;

VII. The railways of Southern Germany, namely :

1. The Royal Bavarian State Railways at Munich,
2. The Royal Bavarian Eastern Railway at Munich,
3. The Grand-duchy of Baden State Railway at Carlsruhe,
4. The Hessian Ludwig Railway at Mentz,
5. The Frankfort-Hanau Railway at Frankfort-on-Maine,
6. The Main-Necker Railway at Darmstadt,
7. The Bavarian and Palatinate Railways at Ludwigshafen.

This concession, however, applies only to goods which, on their way to the exhibition, are directed to one of the receiving-stations of the German Empire or to the exhibition commissions of the different states at Vienna, and on their way back either to one of the said receiving-stations or to the exhibitor ; respectively the forwarder of the goods to the original forwarding-station, and accompanied by a declaration of dispatch ; respectively of return, showing that the goods are destined for the exhibition ; respectively that they were exhibited and remained unsold.

N. B.—The Prussian state railways, and those managed by the state, have granted to exhibitors and visitors of the exhibition a reduction of fifty per cent. on the regular fare.

VIII. The royal Belgian state railways have granted for exhibition-goods of Belgian origin a conveyance free of charges, and a reduction of twenty-five per cent. of the fare of passengers.

The advantages allowed for exhibition-goods and passengers by the concessioned Belgian railway companies joining the royal state railways are not known yet ; they will be published hereafter as soon as intelligence thereof will have been received.

IX. The directions of the Upper Italian and Roman railways agree to convey :

(a) Exhibition-goods of every description at half the existing rate of the interior special tariff in general, with the provision that the tariff per ton and kilometer should at least amount to 5 centimes. In addition to these rates, a fixed rate will be charged of 1 franc per ton by each railway conveying the goods. The aliquot parts of weight will be charged according to the existing arrangements of the interior tariff.

(b) Vehicles also at the half rate of freight of the existing tariff with an additional 1 franc each.

(c) Cattle of any kind, also at a rebate of 50 per cent. from the existing tariff, but without any additional charge ; on the other hand, the loading and unloading must be carried out by the consignor and consignee.

(d) Locomotives and tenders running on their own wheels, at a rate of 75 centimes per kilometer. Locomotives without tenders, at a rate of 60 centimes per kilometer, without any additional charge.

(e) Empty wagons, running upon their own wheels, at the rate of 15 centimes per kilometer in full of all charges.

(f) Persons accompanying exhibition goods and cattle, and possessing a bill of lading and certificate from the chief manager of the universal exhibition, will be charged the half fare for third-class carriages, if the load occupies at least a full truck, or is paid for as such.

Exhibition-goods coming from France will be charged, from Modane and Ventimiglia to Cormons, the following tariff :

(a) For goods conveyed by express-train, 15 centimes per ton and kilometer, or 35 centimes per truck and kilometer in addition to a charge of 1 franc per ton in both cases.

Carriages and cattle will be conveyed by express-trains at half the price of the present existing tariff, with the additional charge of 1 franc per truck.

(b) For goods conveyed by goods-trains, 5 centimes per ton and kilometer, or 25 centimes per truck and kilometer, with the additional charge of 1 franc for every ton loaded.

Carriages, cattle, locomotives, with and without tenders, railway-wagons, will be charged the tariff prevailing in the traffic between stations of the interior of Italy by maintaining the fixed rates.

(c) Passengers accompanying exhibition-goods from France will also be charged, under the terms mentioned above, the half fare for third-class carriages.



Goods of every description, containing a less weight per cubic meter than 150 kilograms, will be charged, without reference to origin, according to the ordinary normal tariff, without any increase.

All objects of art or of value, and such whose length exceeds the ordinary dimensions of the truck or its carrying capacity, are not included in the above arrangements.

The Upper Italian railways will, in addition to the above general tariff, make an additional charge of 10 per cent. for carriages and other luxurious traveling vehicles which are conveyed on a special truck. The several aforementioned reduced tariffs will be also available for the return journey for exhibition-goods which are not sold, in which case it must be so certified by the chief manager of the exhibition, and must be accompanied with the respective advice-note. The above-mentioned tariff will be in force for the dispatch of goods three months before the opening, and for their return three months after the official close of the exhibition.

All exhibition-goods must be accompanied by the advice-note alluded to above, and a certificate of the chief manager of the exhibition, containing name and address of consignor, as well as detailed specification of the goods.

In addition to this, the exhibition-goods must be provided with a label which must be stamped by the chief manager.

All goods sent to the exhibition must be addressed either to the chief manager or to the respective exhibition commissions, and the freight prepaid to the place of exhibition.

X. The directions of the Italian Southern Railways will convey exhibition-goods according to their own present special tariff, 1, that is to say, they will charge according to these special normal rates.

The description of goods which will be included in this tariff are : Machines, natural productions or manufactures which are forwarded to the agricultural, industrial exhibitions, and will be charged for upon the following basis of freight, namely :

- (a) For goods conveyed by goods-trains, the half tariff rate for each class, in which the goods are classed, with the condition that the freight shall not be less than 6 centimes per ton and kilometer.

Goods of less weight than 200 kilograms per cubic meter will be conveyed at a reduction of only 25 per cent.

Inseparable (belonging together) packages with a weight exceeding 3,000 kilograms will be conveyed according to the ordinary tariff of each class to which they belong.

Machines and machinery in cases which on account of their shape or bulk occupy a whole truck, will be charged the rate of 35 centimes per truck and kilometer.

No reduction will be allowed on the fixed charges.

- (b) Express-goods, machines, and machinery, in cases which on account of their bulk occupy a whole truck, will be charged 44 centimes per truck and kilometer.

No reduction will be allowed on other description of goods.

XI. The directors of the Austro-Bavarian-Netherlands Railways, namely :

- (a) The Dutch State Railway,
- (b) Dutch Rhenish Railway,
- (c) Rhenish Railway,
- (d) Cologne-Minden Railway,
- (e) Hessian Ludwig Railway,
- (f) Bavarian State Railways,
- (g) Bavarian Eastern Railway,
- (h) Main-Weser Railway,

have agreed to give the same advantage for the conveyance of exhibition-goods as decided upon by the South German Union lines at the conference held in Vienna on the 19th June last; these advantages were published in a special programme, No. 59, on the 1st July last.

XII. The directions of the Swiss railways agree to convey exhibition-goods, horses and cattle which are delivered as freight, at a reduction of rates of 50 per cent., in this way : that the goods to the exhibition, whether prepaid or not, shall be charged the full tariff rates, and on the return journey to the forwarding station, if the goods remain unsold, they shall be conveyed freight free.

Incidental expenses, such as are not included in the freight, as cartage, loading and unloading, weighing, warehousing, and custom-house charges, will be charged in full.

The following are excluded from these advantages, namely :

Articles of art and value, all express-goods, therefore also horses and cattle, if they are to be forwarded by passenger-trains, as also goods classified in the two last classes of railway loads.

No conclusion has yet been come to respecting the reduction of fares for passengers.

XIII. The direction of the Eastern Railway of France have agreed to the following arrangements :



*a. GOODS.*

Goods of every description (articles of fine arts and of value, carriages, cattle, and railway material excepted) will be conveyed at half the usual rates of the general and special tariffs of the company. The reduced tariff, however, must not be in any case less than the minimum rate of 4 centimes per ton and kilogram.

The consignor has also the privilege of electing to be charged by the general tariff, if he considers it to be to his advantage.

The conditions of the general and special tariffs will be in force for the carriage of goods to the exhibition in Vienna.

The conveyance of goods is subject to every additional charge which the administration has the right to make, also the usual booking charges and the charge for stamps, which latter has to be credited to the state.

On account of the reduction of 50 per cent., the railway company exempts itself, in the conveyance of live cattle, from all responsibility of accidents, whatever the cause may be, even in the loading or unloading.

*b. OBJECTS OF ART AND VALUE.*

The conveyance of objects of art and value will be according to the rates and usual conditions of the general tariffs.

*c. TARIFF EXCEPTIONS.*

Inseparable masses are excluded from the present reduced tariffs (excepting machines, tenders, and wagons running upon their own wheels) if exceeding a weight of 100,000 kilograms; also objects for which, on account of their bulkiness, the means of conveyance will not suffice.

The rates for such descriptions of goods will be determined upon according to circumstances. The same will apply to locomotives, tenders, and wagons which do not run on the rails. Goods forwarded to or from the exhibition must be accompanied by a certificate, in order to prove their being exhibition-goods.

The freight for exhibition-goods must be prepaid when dispatched to the exhibition; and when returned, which must be within a time after the close of the exhibition, the charges may be either prepaid or forwarded.

*d. PASSENGER-TRAINS.*

Passengers to Vienna will be allowed a reduction of 25 per cent. from the passenger-fares.

Parties of least two hundred persons taking tickets direct from Paris to Vienna will be allowed a reduction of 50 per cent from the passenger-fares.

XIV. The boards of the following Russian railways and steam-navigation companies, namely:

1. The Kursk-Kiew Railway Company,
2. The Great Russian Railway Company,
3. The Warsaw-Vienna and Warsaw-Bromberg Railway Company,
4. The Charkow-Nikolajew Railway Company,
5. The Poti-Tiflis Railway Company,
6. The Rason-Koslow Railway Company,
7. The Tambov-Koslow Railway Company,
8. The Riga-Dünaburg Railway Company,
9. The Ribinski-Bologow Railway Company

have reduced their tariff on goods conveyed to and from the exhibition by 50 per cent.

10. The Baltic Railway Company,
11. The Orel-Witebsk Provincial Railway Company,
12. The Schuja-Iwanowo Railway Company,
13. The Nowo-Torschok Railway Company,
14. The Riga-Mitau Railway Company,
15. The Dünaberg-Witebsk Railway Company,
16. The Woronesh-Rostof Railway Company,
17. The Kursk-Charkow Railway Company,
18. The Koslow-Woronesh Railway Company,
19. The board of the Libau Railway Company,
20. The Nowgorod Narrow-tracked Railway Company,
21. The Wolga and Don Railway and Steam Navigation Company,
22. The Grjasi-Zarizyn Railway Company

have agreed to convey goods to and from the exhibition at the reduction of 30 per cent. off the regular tariff rates.

23. The Rjashsk-Morschansk Railway Company have reduced their tariff rates for the conveyance of goods sent to the exhibition by 25 per cent., and on their return from Vienna by 50 per cent.

24. The Wolga Steam Navigation Company and

25. The White Sea-Murmau Steam Navigation Company agree to convey on board their ships, free of expense, all goods or produce sent to the exhibiton.

26. The direction of the Scheksna Towing and Steam Navigation Company offer to convey, free of expense, parcels destined for the expedition below 100 puds weight, and to charge only 50 per cent. of the normal tariff rate on parcels exceeding 100 puds.

27. The steam-navigation companies Druschina, Coronia, and Vulcan have declared to reduce their tariff to 50 per cent.

28. The Dnjeper Steam Navigation Company have agreed to a reduction of 30 per cent. off their normal tariff.

29. The Wolga-Twer Towing and Steam Navigation Company between Twer and Rybinsk,

30. The steam-navigation and commercial companies the Kaukasus and Merkur, and

31. The Kama-Wolga Steam Navigation Company have agreed to a reduction of 25 per cent. off their normal tariff rates.

32. The direction of the Russian Commercial and Steam Navigation Company and the Odessa Railway Company have declared their readiness to convey, free of expense, on board their steamers, as well as on the Odessa Railway, all goods sent to the Vienna Universal Exhibition, on their way to and from.

XV. The railway companies of Turkey, namely :

1. The Varna Railway Company agree to allow upon goods conveyed to the exhibition a reduction of 50 per cent. from the fixed scale of charges.

These goods must be accompanied by a declaration stating their place of destination, signed and sealed by the agents of the said company at Constantinople.

2. The Tschernavoda-Kustendji Railway Company allows for exhibition-goods dispatched to Vienna 50 per cent. reduction from the fixed tariff.

42 PRATERSTRASSE, October 31, 1872, Vienna.

The president of the imperial commission :

ARCHDUKE RÉGNIER.

The chief manager :

BARON DE SCHWARZ-SENBORN.

INCREASE OF TRAVEL ON RAILWAYS.

The receipts of the principal railways of Austria during the month of May, 1873, show a marked increase over the similar period in 1872. The aggregate increase was not so much from passengers as from freight, as will be seen by the annexed figures. Possibly the returns of some of the roads show a larger increase of passenger-traffic, but it was too early in the exhibition season to expect any great augmentation of the number of passengers.

Period.	1872.		1873.	
	Passengers.	Freight, cwt.	Passengers.	Freight, cwt.
May .....	3, 466, 589	44, 704, 417	3, 426, 915	55, 927, 153
January to May.....	12, 044, 944	204, 425, 836	14, 121, 000	261, 531, 653
	Florins.	Florins.	Florins.	Florins.
May .....	4, 743, 808	8, 468, 392	4, 975, 665	10, 567, 607
	Florins.		Florins.	
January to May.....	60, 078, 611		68, 325, 317	

The increase of freight was 11,219,736 centners, or 25 per cent. The money-receipts on passengers were 4 per cent. greater than in 1872, and on freight 2,099,215 florins, or 24 per cent. Taken together and including some roads of minor importance, the increase of receipts in May, 1873, over those of May, 1872, was 2,349,597 florins, or an increase of 17 per cent.



The returns for a period of five months, from January to June 1, show an increase of 2,076,056 passengers, or 17 per cent. more than in the corresponding period for 1872, and the freight increased 57,105,817 toll centners, or 27.93 per cent.

The money-receipts increased 8,246,706 florins, or 13.73 per cent. The same proportion of percentage to the end of April amounted to only 12.67 per cent.

Of the companies separately the Sudbahn (southern railway) reports an increase of 11.36 per cent., and the Erste Liebenburger Bahn 23.63 per cent. Partial returns in the summer-season also show a considerable increase, as may be seen from the subjoined table of the receipts in Austrian florins for one week, June 25 to July 1, in 1872 and in 1873, for two first-named roads and for the entire month of June for the last two.

Railway.	1872.	1873.	Increase.
Sudbahn .....	669,992	789,401	119,409
Staatsbahn .....	530,859	720,089	189,230
Lemberg-Tzernowitzerbahn.....	214,957	313,689	98,732
Bohmische Westbahn.....	101,090	243,563	142,473

The receipts of the horse-railway company for the twenty-seventh week, ending July 5, 1873, amounted to 92,182 florins. From 1st January to the 28th June it was 1,353,807 florins. Full returns of the receipts of the Vienna tramways for 1873, as compared with 1872, could not be procured in season for the report.

But no better illustration of the effect of a great exhibition upon the receipts of railways is needed than that presented in the final official report of the Imperial Commission upon the Paris Exposition of 1867. It is there shown that the percentage of increase of profit in the year 1867, as compared with the previous year, ranges from 0.8 per cent. to 22 per cent. A resumé of the different means of transport and the results, as compared with those of other years, will be found full of practical suggestions.

#### DIFFERENT MEANS OF TRANSPORTATION OF VISITORS TO THE PARIS EXPOSITION.

The position of the Champ de Mars, so near the populous centers of the city, rendered it possible for a large proportion of the visitors to reach it on foot. Nearly 50 per cent. of the visitors are supposed to have reached the exhibition in that way. A special railway-service was provided from the ceinture or girdle-railway of the city, so that access was rendered rapid and easy from even the distant parts. Five new lines of omnibuses were established especially for the exposition, and had over two and a half millions of passengers during the year. There were also the older established lines\* and an increased number of public carriages of all kinds. In addition the small passenger-steamboats, called "omnibus-boats," upon the Seine, were found to be very serviceable.

The extent to which these several modes of getting to the exposition

\* There were 31 lines of omnibuses in Paris. The trips commenced at 8 in the morning and continued until 11 p. m. The usual number of passengers carried yearly before the exposition was eighty to one hundred millions, at a fare of six sous for the inside and three sous for the outside, on top. The omnibus company paid the city 1,000,000 francs annually for the right to run 500 omnibuses.

was availed of is shown in the following tabular exhibit, where the number of visitors, taken at 15,000,000, is doubled to represent the trips to and from, making 30,000,000 trips in all :

Use by visitors of the different modes of transport, Paris, 1867.

Conveyance.	Number of trips.	
	Whole period.	Average per day.
Railway .....	1, 472, 969	6, 788
Boat-omnibus .....	2, 787, 620	12, 846
Omnibus .....	7, 169, 606	33, 041
Tapissieres, vans .....	2, 328, 000	10, 724
Public carriages .....	1, 486, 000	6, 848
Private carriages .....	371, 000	1, 710
Visitors on foot .....	14, 384, 805	66, 291
Total .....	30, 000, 000	138, 248

An approximate classification of the 15,000,000 of visitors will be found in the section of this report upon the number of visitors, &c.

By the omnibus lines in Paris in 1867 there was a decidedly greater traffic than in either 1866 or in 1868. The total number of passengers carried for the three years and the receipts were :

	Passengers.	Receipts.
1866 .....	107, 212, 074	21, 365, 058. 73
1867 .....	118, 317, 372	24, 154, 660. 25
1868 .....	113, 348, 041	22, 362, 992. 41

If we take the mean of the number of passengers carried in the two years 1866 and 1868, before and after the exhibition, as 110,000,000, we may allow the increase of 8,000,000 in 1867 as due to the exposition. This is about 7 per cent. of the total, and corresponds to an increase of 1,500,000 francs in the receipts.

The results of the operations of the compagnie générale des voitures of Paris in 1866 and 1867 show a marked difference in favor of 1867.

Upon the 31st day of December, 1866, the number of available horses belonging to the company was 10,741. During the months of May and June, 1867, the number was increased to 11,200, and was afterward reduced to 10,355 on the 31st of December, 1867. The total receipts of the company were, in 1867, 19,474,490 francs 55 centimes ; 1866, 16,209,278 francs 35 centimes, showing a difference of 3,265,212 francs 20 centimes in favor of the year 1867. In the first three months of the year there was a loss of 100,923 francs 33 centimes. In seven months, notwithstanding the high prices, the company realized a profit of 3,121,640 francs 79 centimes, which was reduced to 742,254 francs by the two unfavorable months at the end of the year. The average receipts per diem for each voiture, deducting the driver's wages, was 16.41 francs, while in 1866 it was 13.52 francs.\*

\* The cost of feeding horses rose in 1867 to 7 francs 97 centimes per voiture. In 1866 it was 7 francs 64 centimes; in 1865 it was 6 francs 40 centimes, and in 1864 6 francs 15 centimes.



## MODES OF REACHING THE VIENNA EXHIBITION FROM THE CITY.

The following general observations upon the access to the exhibition from the city were transmitted in the dispatches of April 15 and May 7

APRIL 15.—Horse-railways along the new streets and lines of omnibuses facilitate access to the Prater and exhibition, but visitors to the exhibition have to pay a second fare, or double what is charged for the regular route, besides losing time by stopping at the station *en route* just outside the Prater. The present indications are that the horse-railway service will be inadequate and unsatisfactory, and that most of the visitors will be obliged to hire carts or carriages. The distance from the principal hotels is from one and a half to two miles. Even now, at certain hours of the day, it is impossible to obtain seats in the horse-cars. Steam-service, like the girdle railway of Paris, is needed, with a station at the very entrance of the building. The revenues of an exhibition must suffer greatly where access is difficult and costly, for few persons can endure the fatigue of long visits, and the only way to study exhibitions, with comfort, is to go often; but if this requires great effort, and perhaps an expense equal to the entrance fee, a second or third visit usually suffices. The public are also threatened now with a strike of the hack-drivers, who object to the tariff of fares established by law, and who propose to avail themselves of the opportunity to refuse to take people to the exposition except at their own prices. All this shows the importance of having independent steam-railway service to the exhibition.

## ACCESS TO THE EXPOSITION.

VIENNA, AUSTRIA, May 7, 1873.—SIR: I have already directed your attention to the manifestly inadequate provision for rapid and cheap access to the exposition, and to the effect which must result to the receipts. (See *ante*, page 19.) This great fault was made manifest upon the opening-day to thousands of persons, and I may say has since been experienced by every visitor.

Upon the day of the opening, the imperial regulations required visitors to present themselves at the doors between the hours of 9 and 11 in the morning. As there was really no other way for persons in full dress to go than by carriage, nearly all the public and private carriages in Vienna were engaged, and it was exceedingly difficult to find one even at ten times the usual price. Between 9 and 10 o'clock the vehicles began to accumulate upon the avenues leading to the exhibition, and at 10 o'clock the line of carriages extended from the exhibition-gates to and beyond the Grand Hotel, about a mile and a half distant. So also long lines extended up all of the principal avenues converging toward the Prater. The cars upon the horse-railway added to the confusion and jam. Progress was well-nigh impossible. Two-thirds of the invited guests, and the holders of season tickets, and tickets purchased at a high price for the purpose of seeing the ceremony, were hopelessly excluded from the building before the ceremony. Many did not arrive until hours after it was over. The chief United States commissioners, with their families, who started at 10 o'clock, did not reach there until after the ceremony.

The police preserved excellent order by keeping the carriages in line, while they left an open, free drive for the court carriages and those holding well-known Austrian officials and the diplomatic corps. Most of the carriages were from two to three hours on the way.

The arrangements for the reception of the carriages at the exhibition were most faulty. The guests were set down at the outer gates on the south, or principal side, and had to walk the length of a square or two before they could reach the building.

The long walk from the gates to the building, and the traverse of the open court, were rendered more than disagreeable by the fact that it was a stormy day, the rain at times falling in torrents and saturating the newly-made gravel-paths. For gentlemen this was sufficiently uncomfortable, but for ladies, who, in accordance with the regulations, had put on gala attire, it was cruel. At the west door—at the extreme end of the building where the yellow and green tickets were received—carriages were allowed to deliver persons at the entrance, but this required a long walk through the building to the rotunda.

I give these details in order that we may not neglect, from inadvertence, our duty in 1876. We must, in inviting a great concourse of people, be prepared to deal with them *en masse*. Their health and comfort must be regarded as well as their other rights. Purchasers of tickets to view a ceremony, especially strangers from abroad, have a right to expect the place to be accessible. A great but an inaccessible exhibition is an absurdity. Ordinary means of conveyance fail at the time when most required. To expect that the ordinary means of movement of persons in our great cities will, by a little improvement or extension, suffice for the needs of great exhibitions, is a grave error. We all know that the street-railway service, the omnibuses and cabs of New York and Philadelphia are already overburdened and insufficient, and that the evil is



increasing. The people must have something better irrespective of the exhibition. For Philadelphia the centennial celebration gives a grand opportunity to secure rapid and cheap access to its park. Such access is a public want to-day, and each succeeding year will make it more and more evident.

In some respects the conditions of transportation in Vienna are like those of Philadelphia. The city is divided by the Donau Canal, and most of the travel to the Prater crosses two bridges, over one of which the horse-railway extends. These bridges of course concentrate the travel on certain lines. Any great increase of the travel causes a delay, if not a blockade. Even now, here, the omnibuses are frequently delayed at the bridges.

The loss of time in visiting the exhibition at the Prater is serious. There are but four available ways of getting there: 1. By carriage or cab. 2. By omnibus. 3. By horse-cars. 4. On foot.

By the first, from the Grand Hotel, a central point on the line, three-quarters of an hour, at the least, are required, provided there is no jam or accident. The fare is 20 kreutzers, (about 10 cents.) The cars are generally full and the platform crowded, as with our own at home, and they are hardly accessible to ladies. At the end of the route the passengers find themselves nearly a square distant from the west end of the machinery-hall and the Industrial palace, and they have to walk over loose gravel to reach the entrance.

By the omnibus, the fare, time, and other conditions are nearly the same. A carriage is the most rapid and comfortable conveyance, and costs from one and a half to two florins, about seventy-five cents for one or for two persons.

Of the total number of visitors to the exhibition, probably eighty per cent. take the cost of getting there into consideration, and govern the number of visits accordingly. It is tolerably certain that for those who walk a distance of one or two miles the fatigue of a visit is so great that they will not repeat it.

The more this subject is examined the more clearly it will appear that a wise policy requires the access to an exhibition to be not only cheap but rapid and comfortable. It should be more—it should be inviting, and, if possible, the cost should be covered in the cost of entrance. In other words, the would-be visitor should be able to buy his transportation and entrance-ticket together, and for a price which, to him, is satisfactory for the entrance alone. This plan works well in London for the Crystal Palace, Sydenham. That marvelous structure, with its beautiful gardens and other attractions, is in direct communication with almost every part of London and its suburbs for miles around; and tickets to go and return may be had for from one shilling and sixpence to two and sixpence, according to the class of carriage taken. More than this, visitors are now set down *inside* the building. The trains are frequent, and the ride is alone worth the whole cost.

There are four direct routes from London and environs to the Crystal Palace:

#### I.—FROM VICTORIA.

1. Brighton Co., (*via* Streatham, Lower Norwood, &c.)
2. L. C. & D. Co., (to High Level.)
3. L. C. & D. Co., main line, (to Sydenham Hill.)

#### II.—FROM LONDON BRIDGE.

1. L. B. & S. Co., (*via* Sydenham.)
2. L. B. & S. Co., (Tulse Hill.)

#### III.—FROM LUDGATE HILL.

1. L. C. & D. Co., (to High Level.)
2. L. C. D. & Co., main line, (to Sydenham Hill.)

#### IV.—FROM BLACKHEATH HILL.

1. L. C. & D. Co., (*via* Nunhead and High Level.)

Another great advantage of steam-railway communication is the possibility of accommodating societies, schools, and parties of excursionists. Special trains can be run upon such occasions, setting down from 50 to 200 or 500 persons as a unit.

I feel that I cannot sufficiently urge the importance of the subject of rapid and cheap transportation to and *within* our coming exhibition. I hope that it will be thoroughly considered, and that effective action will be taken in time. I am sure that the receipts at this Vienna Exhibition will be seriously diminished by the difficulty of getting to it, and I now roughly estimate the loss at not less than 25 per cent.; or, in other words, the receipts would, I believe, be 25 per cent. greater, if the conditions of access had been as they should be. Most of the money spent in visiting the exhibition goes to the cab drivers or owners.



## RECEPTION OF VISITORS ARRIVING BY CARRIAGES.

[From dispatch June 14, 1873.]

Even at the west entrance there is no suitable provision made for taking up and setting down carriage-loads of people. There is no shelter. The carriages are not allowed to stand near the entrance, and when wanted are called up by telegraph. If it rains it is almost impossible to procure a carriage; and ladies who do not own one have sometimes to wait for a long time upon the steps before they can get away. A long, covered porch reaching to the carriage-stand should be provided, or, at least, there should be as much protection from the weather as we find at the main entrance of any well-appointed theater or opera-house.

The peculiar elongated form of the building is the cause, to a great degree, of the discomforts of access and of getting away.

The principal inlets and outlets are three only, in the center and at each end. The two end entrances are three-quarters of a mile apart. The art-gallery is more than three-quarters of a mile from the west entrance. If a person wishes to return to the city from the art-gallery, or from the eastern end of the building, it is easier to walk inside the long building than to walk on the rough gravel in the sun or rain outside. There are two covered ways extending from near the building southward to the main south gates, but these ways are circuitous, and do not lead to any line of omnibuses or of horse-cars, and, moreover, are not in the most direct line to the city. They are not therefore much used. But even if any person desires to use them, it is almost impossible, when inside the building, to know which transept to take to reach them.

But all these details pertain to the question of accessibility, upon which I have already expressed my views with sufficient distinctness. I will, therefore, only add that it is not enough to take people to one or to both ends of a great exhibition like this. Interior transportation is required. Steam-railway service into the heart of the exhibition is the remedy.

## PUBLIC CARRIAGES—REGULATIONS.

Each cab or fiacre is required to have posted in a conspicuous place in the interior printed copies of the law and tariff of fares, with the number of the vehicle. On the opposite side of the paper there is printed a blank form for complaints, addressed to the "Police Direction," and which can be sent free in the post. A blank copy of one of these tariffs, &c., is appended.

*General list of rates for carriage-hire.*

For conveyance within the city limits of Vienna, not including the Prater, the rates are as follows:

	Florins.	Kreutzers.
For use of carriage for one-quarter of an hour or less.....		40
For more than one-quarter of an hour, and not more than one-half hour.....		50
For every additional quarter of an hour.....		20

From any point within the city limits to any of the places below-named, the rates are as follows:

1. Gandenzdorf, Upper and Lower Meidling, Fünfhaus, Sechshaus, Rudolfsheim, Neulerchenfeld, Ottakring, Hernals, Währing, Weinhaus, Upper Döbling, Simmering, and the Meidling railway-station, to the arsenal and the estate fronting the favorite line, or return...	1	20
2. Schönbrunn, Hietzing, Penzing, Gersthof, Lower Döbling, Zwischenbrücken, or return .....	1	50
3. Lainz, Speising, Upper and Lower Saint Veit, Hacking, Baumgarten on the Wien, Breitensee, Hetzendorf, Altmannsdorf, Dornbach, Neuwaldegg, Pözlzeinsdorf, Lievering, Grinzing, Heiligenstadt, Nussdorf, Floridsdorf, and the station of the Drahtseil railway at Kahlenbergerdorf, or return.....	2	
4. For conveyance to and from the Vienna railway stations, from one principal railway to another, from the western station to Sechshaus, Fünfhaus, Rudolfsheim, Gandenzdorf, Upper and Lower Meidling, from the southern and state railway station to the arsenal and the estate, or return.....	1	

For conveyance from the Vienna railway stations to places not mentioned in paragraph 4, outside of the city limits, the rates for those mentioned in paragraphs 1, 2, and 3 may be charged.



One-horse carriages, No. 982—*Special list of rates.*

	Florins.	Kreutzers.
I. For drives to the prater :		
From the districts of Leopoldstadt and Landstrasse, or return.....	1	
From the interior of the city, or return.....	1	20
From other districts, including hack-stands on the line, or return....	1	50
From places mentioned in paragraph No. 1, or return.....	2	
From those mentioned in paragraph 2, or return.....	2	50
From those mentioned in paragraph 3, or return .....	3	
From any point within the limits to the summer-house in the Fren- denau to the steamers' landing-place near the Imperial mills, (Kaiserinühlen,) and the I. and R. shooting-ground at the Saeulen- haufen.....	2	

Parties visiting the places mentioned in paragraphs 1, 2, 3, and 4 will be required to pay, for any extra use of the carriage, for the time that it is detained, and for the time occupied in returning; also for the time that the carriage is detained when the prater is visited, at the rate of 20 kreutzers for each one-quarter of an hour.

From 11 o'clock p. m. to 5 o'clock a. m. the above rates will be increased one-half.  
For light baggage taken into the carriage there will be no charge; if carried on the box or behind the carriage, a charge of 20 kreutzers may be made.  
Further particulars may be found in the hack-regulations, which every hackman must produce for inspection when requested to do so.  
For complaints there is room on the back side, (below.)

To the I. and R. director of the police at Vienna :

COMPLAINTS AGAINST HACKMEN.

Complaint :  
Name        }  
and            }  
residence    }  
                  of the complainant.

NOTICE.—This complaint may be transmitted immediately to the director of police either free by mail or through the first policeman one meets.

MANAGEMENT OF VEHICLES.

But whatever conveniences may be provided for the multitude in going to or leaving an exhibition, the necessity of due provision for setting down passengers arriving by carriages will remain, and also of making proper regulations for the movements of vehicles upon the streets and the principal avenues of approach.  
Carriages should, if possible, be allowed to drive up to the very doors of the building, or to some central place, and yet there must be ample space and no confusion. To avoid the latter at this exhibition, all carriages are kept at a distance, half a mile from where they are wanted. They are invisible, except at the west end, and even there must be sent for by a servant or by telegraph. Archdukes, princes, kings, and emperors are allowed to drive inside the gates, (they are exceptions to the rules,) and they can then drive to the main entrances of the building, or to the doors of their private palaces on the grounds. They do not know of the inconveniences I have noted. Their equipages are allowed to stand in the grounds, convenient to call, and the comfort and pleasure of the visitors are not impaired by them.

STREET-MANAGEMENT OF VEHICLES.

The management in Vienna of the vehicles upon the streets it must be said is admirable, though such rapid driving is permitted that the lives of foot-passengers are in constant jeopardy. But this rapidity of movement allows a great number of carriages to pass in a short time. In no city have I seen such regularity and celerity of movement of vehicles, and in streets so narrow that only one carriage can pass at a time.\* Carts and traffic wagons at certain hours are excluded from certain streets. In the narrow streets vehicles can only pass in one direction. None are allowed to stand in the thoroughfare; no obstructions are tolerated. Stringent rules are adopted, and the police are constantly on the alert to enforce compliance with them. Policemen are stationed in the middle of the main carriage-ways and give their orders peremptorily. At the Prater-stern, where the avenues converging from the south, the center, and north of the exposition unite, mounted policemen direct the constant streams of vehicles. One avenue is exclusively for carriages, the next is used by the omnibuses and traffic-wagons, and a third by the horse-railways. In the two first all carriages going in must keep to the left, and on no account are allowed to take the center or right side of the road; those coming out pass on the other side, and thus there is no confusion.

\*In the Karnther, Rotherthurm, and other narrow streets of the old city the carriages pass only one way. The pavements are very narrow as well as the roadway.



The statements regarding the inadequacy of transportation to the exhibition were fully sustained by subsequent experience. It was always difficult to reach the exhibition with rapidity and comfort without taking a carriage, and at the close of the day all vehicles were overcrowded and thousands were compelled to walk. The struggles at the entrances to the cars of the horse-railway and at the omnibuses were positively dangerous to life and limb. These ordinary modes of conveyance were most crowded and unavailable to thousands of persons when most needed, as in case of a storm, a shower, or some unusual attraction drawing a greater number of persons than usual.

The horse-railway company did its utmost doubtless to meet the pressing demand, and the cars were run one after another at such short intervals that, on reaching the branch track to the exhibition, they were crowded upon it in close contact. This resulted in a constant jam of the cars at the terminus and such a delay to the hindermost car that its occupants generally left it long before it reached the extreme end of the track and thus had to walk from an eighth to one-quarter of a mile before they could reach the entrance to the exhibition, and this entrance at the extreme west end, opposite the machinery-hall and a half a mile or more from the great music-stand where, toward the close of the day, the greatest numbers were congregated. The terminus itself was placed inconveniently far from the entrance-gates. Instead of delivering passengers under cover at an entrance from which they could pass by covered ways into the building, they were set down several hundred yards from the gates, at one side, and were obliged to cross streets and newly-graveled road-ways without any pavement. Once inside the gates, there was a long walk before shelter could be reached.

It was surprising that, with such a manifest need of some transportation into the precincts of the exhibition and with a constantly-expressed desire to have horse-railway service inside the grounds, and there being a track laid from one end of the grounds to the other, parallel with the industrial palace and the machine-hall, nothing was done to satisfy the public wish until late in the season. In October the "experiment" was tried of running a horse-car from one end of the grounds to the other upon the existing track. This being at once gladly availed of, a steam-car was added, and, finally, several cars made regular trips and were always filled with passengers, thankful for the relief thus afforded them and the time saved.

#### RECEPTION AND DELIVERY OF GOODS.

This subject may be introduced by an extract from the dispatch of April 15, from Vienna, which shows the condition of the work of reception and distribution of the goods at that time.

It was only in the last week of March, and the first week of this month, that merchandise began to arrive here in quantity for the exhibition. Since then it has been concentrating rapidly, much to the embarrassment of all concerned. The Northern Railway has been blocked for several days. Four hundred freight-cars are jammed together, and still others come. The road from Trieste, fortunately, not being so much crowded, remains open, and several trains loaded with the cargo of the Supply, recently arrived from the United States, were *en route* last night, (14th.)

From the 10th to the 23d of March, 657 freight-cars transported within the inclosure of the exhibition 31,280 quintals\* of objects. From the 24th to the 31st of March, 675 cars delivered 60,777 quintals, among which were 2,006 quintals from Japan. From the 31st of March until the 1st of April, 774 cars delivered 60,560 quintals. From the 7th to the 13th of April, 1,156 cars brought 79,403 cwts.; from the 13th to 20th, 11,844

---

\*The quintal = one hundred pounds, nearly.



cars, 78,795 cwts. From the 28th of April to the 4th of May, 907 cars delivered 63,435 cwts., and from May 4, to May 18, 1,206 cars delivered 83,053 cwt., of which 2,650 were from the United States.

I have already been much instructed by watching the reception of these packages. Although the long buildings have one or more railway-tracks extending parallel with them on both sides, and alongside of parts of the industry-palace there are three parallel tracks, these tracks are, more or less, encumbered by the work of construction still going on, and by cars either full or partly empty, so that a car arriving with goods, (say for the United States section,) cannot reach that end, (arriving as it would from the east,) and must wait its turn or opportunity. In consequence of such delays and difficulties, some cars are unloaded at a distance from the part of the building for which their contents are designed, and then commences a struggle to get the cases forward. I have seen from ten to twenty sailors tugging away at enormous cases of goods, striving to push or haul them on little ordinary barrel-trucks over the loose, uneven, gravelly ground from the cars to the buildings, or from one side of the building to the other, outside. Some cases are rolled over and over, some are carried on the shoulders of men, and the wonder is how they get into the building without the destruction of the contents. The necessity for transverse tracks is clearly shown, and for the adoption of a good system of unloading and subsequent distribution. It is to be particularly noted that the ground about a new building is new, and, as usual, is greatly encumbered with all sorts of debris, with timbers, stone, mortar-beds, scaffolding, and the like; and even if the roads are made, they are soft and almost impassable. No adequate preparation appears to have been made for the unloading and reception of the goods. This is a subject which should engage attention in connection with the plan of the building for the exhibition in 1876.

Branch tracks from the railways are also extended alongside of, and into, the machinery-hall, on both sides. This greatly facilitates the placing of the machinery. In addition, an elevated track is constructed, along which a truck fitted with hoisting-gear traverses back and forth directly over the foundations for the machines. The tracks are laid upon the top of the supports provided for the shafting on one side, and upon a similar line of supports on the other next to the wall of the hall. This elevated railway is represented upon the drawings and plans of the machinery-hall which you already have in the office. Theoretically, this elevated hoisting-truck appears to afford all the facility for the installation of heavy machinery that could be desired; but, practically, the working does not appear to have been satisfactory, and little use, so far, has been made of these expensive arrangements. One good reason is, the track is not made continuous from one end to the other of the building. It is broken into sections. Numerous trucks are therefore required, and the range of movement of each is confined to the section on which it is placed. If the track were made to be continuous from one end of the building to the other, one hoisting-truck on a side would answer. The floor-tracks, being continuous, heavy objects are taken upon the platform-cars directly to the place where they are to be laid down, and for objects of moderate size and weight a steam-crane mounted upon a platform-car suffices for the rapid unloading and transfer to the precise spot designed for them.

#### QUANTITY OF FREIGHT DELIVERED BY THE RAILWAYS AT THE PARIS EXPOSITION.

The report of the Paris Exposition shows that the railway which extended to the Champ de Mars conveyed 9,636 tons of 1,000 kilograms and in 2,091 cars. Nearly all arrived between the 10th of February and the 30th of March. These figures do not show the total tonnage of the goods received in the exposition, for a large portion, 6,277 tons, was sent direct from the several railway-stations about Paris on carts and wagons to the exposition, giving a total of nearly 16,000 tons arriving by rail. The total tonnage of the exposition is reckoned at 22,224. There were over 50,000 packages. In the exhibition in 1855 the total weight of objects was only 7,898 tons.

At the end of the exposition 18,850 tons of freight were taken by the different routes, the difference between this figure and that of the inward freight being explained by the numerous sales and deliveries during the progress of the exhibition, by the abandonment of materials which were used in installation, and by the numerous deliveries of cases and objects not packed by porters, of which no account was taken.



## VII.—CLASSIFICATION AND ARRANGEMENT.

The classification of an exhibition may be said to be its organic life, the basis of its growth, the frame-work or skeleton from which it takes its shape and character. The groups and classes are like crystalizing points, drawing to themselves like objects. The elaborated system stimulates and directs effort and is the basis of organization of the work of collecting, arranging, and examining the objects. The classification is intended not only as an expression in general and in detail of what the exhibition is to be, and as the guide for the arrangement or placing of the objects, but it should be at the same time a guide to the exhibition, useful alike to the exhibitors, the jury, and the public. The system, whatever it may be, characterizes the whole exhibition, pervades its literature, and is the basis of the descriptions, the catalogues, and the reports. It has no ephemeral influence, but modifies virtually and for all time the results of the undertaking. It is therefore of first importance to secure a well-devised system. Its range or comprehensiveness depends of course upon the nature of the exhibition to be made, whether local and partial, including only the results of certain industries or the products of one country or state, or international and universal, taking the products of all countries and of all human effort.

Of all the great exhibitions the two last only can be said to have been “universal,” and these were but incompletely so in their plan as well as in their realization. In the exhibition at London, 1851, the great starting-point of modern international exhibitions, important products and groups of objects were not mentioned in the classification and were not exhibited, but have had conspicuous places in later exhibitions. The Paris classification of 1867 was marked by its universality and the prominence given to the unfolding of the efforts for the amelioration of the condition of man.

The classification for the Vienna Exhibition was announced as early as September, 1871, in the second of the printed programmes, and was freely distributed in Austria and other countries. There were twenty-six leading groups or divisions, subdivided in classes as follows:

*Classification of the Vienna Exhibition*

## GROUP I.—MINING, QUARRYING, AND METALLURGY.

- Class 1.—Mining.
- Class 2.—Iron metallurgy.
- Class 3.—Other branches of metallurgy.

## GROUP II.—AGRICULTURE, HORTICULTURE, FORESTRY.

- Class 1.—Farming.
- Class 2.—Animal products.
- Class 3.—Forestry.
- Class 4.—Products of the vine and fruits, vegetables, and gardening.
- Class 5.—Agricultural machines.

## GROUP III.—CHEMICAL INDUSTRY.

- Class 1.—Chemical products for technical purposes.
- Class 2.—Pharmaceutical products, volatile oils, perfumery, drugs, and other raw material for pharmacy and chemical industry.
- Class 3.—Industry in fat substances.
- Class 4.—Products of dry distillation.
- Class 5.—Matches, colors, dye-stuffs, and other products of chemical industry.

## GROUP IV.—FOOD AS PRODUCTS OF INDUSTRY.

Class 1.—Flour and products derived from it.

Class 2.—Sugar, confectionary, chocolate.

Class 3.—Wine and wine surrogate, beer, and other fermented liquids, vinegar.

Class 4.—Preserves, extracts, and meat.

Class 5.—Tobacco manufactures.

## GROUP V.—TEXTILE INDUSTRY AND CLOTHING.

Class 1.—Woolen fabrics.

Class 2.—Cotton fabrics.

Class 3.—Flax fabrics.

Class 4.—Silk fabrics.

Class 5.—Fringe-work, gold and silver web, lace, net and embroidery goods, fancy-feathers, and artificial flowers from cloth, paper, leather, &c.

Class 6.—Ready-made linen, clothing, and fur-goods, hats, and gloves.

Class 7.—Boots and shoes.

Class 8.—Upholstery-work.

## GROUP VI.—LEATHER AND INDIA-RUBBER MANUFACTURES.

Class 1.—Leather, fur-skins.

Class 2.—Leather goods.

Class 3.—India-rubber goods

## GROUP VII.—METAL MANUFACTURES.

Class 1.—Gold and silver goods, jewelry.

Class 2.—Iron and steel goods.

Class 3.—Arms, excluding military arms.

Class 4.—Manufactures of other metals.

## GROUP VIII.—WOOD INDUSTRY.

CLASS 1.—Carpenters, joiners, and cabinet-makers' work, inlay, molding, turnery and carved work.

Class 2.—Specimens of split-wood, wood-ware, cork-goods, basket-work.

Class 3.—Wood-painting, staining and gilding.

## GROUP IX.—STONE, CLAY, AND GLASS WARE.

Class 1.—Stone and cement-work.

Class 2.—Clay ware.

Class 3.—Glass ware.

## GROUP X.—SMALL WARE AND FANCY GOODS.

Class 1.—Manufactures of meerschaum, tortoise-shell, horn, bone, ivory, mother o'pearl, whalebone, &c.

Class 2.—Toys, wax-ware.

Class 3.—Fancy-leather goods, bronze-work, and lacquered goods.

Class 4.—Walking-sticks, whips, umbrellas, and parasols.

## GROUP XI.—PAPER MANUFACTURES.

Class 1.—Paper material, pasteboard, paper.

Class 2.—Colored paper, paper-hangings, playing-cards, cartoon-paper.

Class 3.—Writing-paper, drawing and painting materials.

Class 4.—Book-binding, mill-board, port-folio, and papier-mâché.

## GROUP XII.—GRAPHIC ARTS AND INDUSTRIAL DRAWING.

Class 1.—Letter-press printing, copper-plate and steel engraving, lithography and chromography.

Class 2.—Engravings and guillochee-work, wood engravings.

Class 3.—Photography.

Class 4.—Drawings of patterns and decorative paintings.



## GROUP XIII.—MACHINERY AND CONVEYANCES.

- Class 1.—Prime movers, shafting, &c., elementary parts of machines.
- Class 2.—Machines in motion, (excepting agricultural machines, which are placed for examination in Group II. )
- Class 3.—Engines and other rolling stock for railways.
- Class 4.—Street conveyances and other means of transport.

## GROUP XIV.—SCIENTIFIC INSTRUMENTS.

- Class 1.—Mathematical, astronomical and philosophical instruments, and chemical apparatus.
- Class 2.—Clocks and watches.
- Class 3.—Surgical and technical instruments.

## GROUP XV.—MUSICAL INSTRUMENTS.

- Class 1.—Touch-board instruments, (harpsichords, pianofortes, organs, harmoniums.)
- Class 2.—Stringed instruments, (harps, guitars, &c.)
- Class 3.—Wind instruments, drums, music-boxes.

## GROUP XVI.—MILITARY OBJECTS.

- Class 1.—Armament and equipment of troops.
- Class 2.—Accouterments, artillery and engineer service.
- Class 3.—Sanitary appliances.
- Class 4.—Military education and means of instruction, maps, and historiography.

## GROUP XVII.—MARINE OBJECTS.

- Class 1.—Ship-building and ship-fittings.
- Class 2.—Constructions for navigation, hydrography.

## GROUP XVIII.—ARCHITECTURAL AND CIVIL ENGINEERING.

- Class 1.—Buildings.
- Class 2.—Water-Engineering.
- Class 3.—Construction of roads and railways.

## GROUP XIX.—THE PRIVATE DWELLING-HOUSE.

## GROUP XX.—THE FARM-HOUSE.

## GROUP XXI.—NATIONAL DOMESTIC INDUSTRY.

## GROUP XXII.—REPRESENTATION OF THE INFLUENCE OF MUSEUMS OF FINE ARTS APPLIED TO INDUSTRY.

## GROUP XXIII.—ECCLESIASTICAL ART.

The objects exhibited in Groups XIX, XX, XXI, XXII, and XXIII will be examined by special juries, which will be composed of jurors of groups where the objects belong to, either from an industrial point of view or as a whole.

## GROUP XXIV.—AMATEURS' EXHIBITION. (NO EXAMINATION.)

## GROUP XXV.—FINE ARTS OF THE PRESENT.

- Class 1.—Architecture.
- Class 2.—Sculpture.
- Class 3.—Painting.
- Class 4.—Arts of drawing.

## GROUP XXVI.—EDUCATION, TEACHING AND INSTRUCTION.

- Class 1.—Plans, arrangement, means of teaching and work of people's schools.
- Class 2.—Plans, arrangement, means of teaching and work of middle-class schools.
- Class 3.—Plans, arrangement, means of teaching and work of professional schools, of upper technical schools and universities.
- Class 4.—Helps and means for the progress of adults.

In addition to these groups provision was made for special exhibitions and competitive trials of machines and methods, for the history of inventions, the history of industry, of prices, and an exposition of the commerce and trade of the world, as fully stated in the official announcement made with the publication of the classification, as follows:

III. There will be competitive trials of machinery, apparatus, processes and methods of work of different dates, showing their successive improvements; for example, sewing-machines, weaving-machines, telegraphy, photography, &c.; an attempt will thus be made to give an epitome of the history of inventions. In addition to this, an attempt will be made to place side by side the productions of machines and hand-work, and to show how in some cases machines have superseded hand-work, while in others they have aided and increased its products.

IV. By exhibiting also analogous products of industry, manufactured at different epochs, with their relative prices and with samples and models, it is intended to show the increasing power of different industries, their dependence on the changes in taste and their influence upon taste as well as their importance in national economy at different epochs, thus exhibiting the history of industry.

V. To show by a retrospective view the influence of science on the progress and development of manufactures there will be exhibited the gradual conversion of waste into use, or the increase in the employment of the former, by comparing the waste with the articles manufactured therefrom, and also the intermediate products, so far as these are the result of inventions and discoveries since the first international exhibition of London, in 1851.

VI. A further aim in this exhibition is to give the history of prices; to exhibit from the chief districts of production the prices of more important articles, going as far back as possible and placed side by side in average periods of five years and illustrated by samples and specimens.

VII. To show the international exchange of products, a representation of the commerce and trade of the world will be formed. For this purpose samples and specimens of the articles of trade and commerce of all the important harbors and sea-ports are to be exhibited.

On each sample will be marked its origin, its destination, its price and value, the quantity of import and export, &c.; along with these will be shown statistical and graphic tables, the movement of the navigation and commerce of each seaport during the last ten years.

VIII. The intention just expressed of aiding the study of this exhibition by the help of statistical and graphical tables will be carried into effect in all the departments of the exhibition, by showing, from official records, the industrial progress made by each country since the first international exhibition of London in 1851. For example: there will be exhibited tables of the increasing areas of cultivated soil, the annual quantities of agricultural products, the value of the land, the interest on money, the traffic and capital of railways, the increase of population, &c., as they have appeared at each of the periods of subsequent international exhibitions, viz: Paris 1855, London 1862, Paris 1867.

Thus there will be shown the productive powers of different nations in the respective departments assigned to their products in the exhibition-building.

On the other hand all particulars of the different articles to be exhibited, such as the name of the exhibitor, the description of the objects, the price, (which the exhibitor is at liberty to attach if he please,) may be shown on labels attached to each article.

In the same manner all other informations of public interest the exhibitor may wish to have published, such as the history and importance of the establishment, its progressive development, its annual production, may also be written or printed and annexed to the objects exhibited; in contradistinction to former international exhibitions, which confined these informations to the printed catalogue.

IX. For the purpose of rendering this exhibition especially instructive and educational, it is intended to make comparative trials and experiments on processes new or hitherto little known. The value of objects exhibited will be submitted to practical tests. For example: Experiments will be made regarding the production of wines, (application of the hydro-extractor, heating of wines, &c.) trials with machine-tools of every description, application of the electric light, utilizing of aërostation, (captive balloons, &c.) experiments with explosive materials, with steam-plows, transmission of power by wire ropes, locomotives, engines on common roads, steam fire-engines, &c.

Lectures will be given on these subjects in a special lecture-room of the exhibition, and international prize-problems issued, as, for example, on the best implements for the cultivation of beet-roots for the fabrication of sugar.

X. Arrangements will be made for a series of temporary international exhibitions of such articles which, by their nature, do not admit of an exposition of long duration. They will comprise—



Living animals, (horses, cattle, sheep, pigs, dogs, cats, fowls, game, fish, &c.)

Poultry, venison, butcher's meat, lard, &c.

Dairy produce; milk, cheese, &c.

Vegetable produce; fresh fruits, fresh vegetables, flowers, plants, &c.

Living plants, injurious to agriculture and forestry.

Dynamometric experiments will be made on the tractive force of animals. Also international races, at the time of the exhibition of thoroughbred-horses, will take place, and for these races prizes will be awarded.

Representations of all other kinds of sports, (regattas, &c.,) and also national games and plays will be arranged.

Some of these temporary exhibitions will give rise to practical experiments and practical discussions on the matters to which they refer. For example: the exhibition of dairy-produce will give rise to a series of experiments on the improvements relative to the manufacturing of butter and cheese, &c.

To enable the public to appreciate alimentary substances exhibited, refreshment-rooms (tasting-pavilions) will be erected, where each exhibitor can sell samples of his products even in the shape of cooked food.

XI. During the exhibition various international congresses and conferences will be arranged for discussing important matters, to which either the exhibition itself may give rise, or specially selected as subjects of international discussion.

More especially there will be international congresses of men of science, teachers and artists, physicians, directors of museums of fine art applied to industry, teachers of drawing, architects, engineers, representatives of chambers of commerce, economists acquainted with the questions relative to banking and insurance, of agriculturists, foresters, mining engineers, &c.

Among questions subject to such discussion will be the following:

The question of intellectual property, of the improvement of public taste, of the promotion and diffusion of arts of design, on economy of transport, on obtaining the highest efficiency of machines, on the extension and development of forest statics, on reducing the price of food, whether by increased production, better organization of markets, reformed cookery or new methods of preserving food; on the nourishment and early rearing of an infant, on early healthful training and gymnastics, on the exertions of our time in regard to the curing of deformed children, on the education of woman and improvement of her social condition.

These projects were in most cases realized. This was notably true of section VIII. The statistical and graphical tables of the exhibition were numerous and highly instructive, but exhibitors too often neglected to avail of the opportunity to give much desired information concerning the objects displayed.

The international congresses were held in succession as planned. Prominent among these for the number in attendance and the general interest were the patent-congress and the medical congress; reports of these and their conferences will be found under a separate head.

#### THE ARRANGEMENT OF OBJECTS.

A classification presupposes some arrangement or placing of objects in accordance with it; but, though connected classification and arrangement are not necessarily one, objects may or may not be placed in the order or relations established by classification. They were not at Vienna. The division or apportionment of space was geographical and without, at the same time, being made in such a shape that similar objects could be placed in parallel zones, as they were at Paris. The form of the building rendered any such combination of the geographical and systematic elements impossible. The space was given to each country *en bloc*, and the arrangement of the objects was left to the fancy or convenience of each commission.

There was consequently no system comparable with that at Paris. The classification did not become a guide to the exhibition, and one great result attained at Paris was lost or not realized.

The comparative element was completely sacrificed to the geographical; that is, it was not possible to place objects of similar kind or nature side by side, in lines, for comparison. There was no fixed system of



arrangement to govern the placing of objects within the spaces so allotted to the countries. The geographical idea was the only one, or at least the dominant one. If we suppose that each transept was given to a single country, or a group of contiguous countries, we had a series of separate exhibitions which the main building served to connect together.

It appears to me to be very unfortunate to lose the advantages of an arrangement according to the nature of the objects. To sacrifice this to the geographical idea seems a retrograde movement in the experience of exhibitions.

The form of the building conformed to the geographical idea, not to the other, for the transepts, were too narrow to allow of any systematic arrangement of the objects. Convenience and adaptation of the space alone could be consulted.

### VIII.—INSTALLATION.

The work of installation\* combined with the allotment of space is perhaps the most difficult, embarrassing, and annoying of all the duties which fall to the lot of exhibition officials. Large sums are expended by individual exhibitors, and their wishes, or the views and opinions of their architects, are not always in accord with those of the administration. The rights and convenience of the general public have to be maintained, and a corps of architects has to be employed for the general supervision of this part of the exhibition-work.

At no preceding exhibition has there been such a lavish expenditure of money in the work of installation of the objects as in this of 1873 in Vienna.

Obviously the tendency on the part of all ambitious exhibitors is to make a more effective and artistic display of their fabrics and products than they hitherto have. They evidently feel it to be for their interest in every way to have a showy and attractive arrangement of their goods. Theoretically, it is the object itself that the visitor regards and judges, and not the way in which that object is placed before him. The style or mode of showing the object should not affect his appreciation of its excellencies or its defects. But there is no doubt that even the careful observer, or the most judicial member of a jury, is more or less influenced by the *way* in which objects are shown to him. On carefully considering the subject we must conclude that the mode of displaying the various objects in a great exhibition is a very important and intricate problem, connecting itself with the construction and decoration of the building, with the grouping or classification, with the commercial interests of exhibitors, and with the æsthetics of the whole.

At Vienna the visitor is impressed by the succession of costly show-cases along the whole length of the industry-palace and in most of the transepts. They are in general most artistically designed, and they contribute in a great degree to the magnificence of the exhibition. Large sums—thousands of dollars by single exhibitors—have been expended in placing their objects. The work has been done on a most liberal scale, and shows great earnestness and enthusiasm on the part of exhibitors, and, at the same time, shows conclusively that such opportunities have a real money-value to them of no small amount. The same gen-

---

\* The word installation in the technical exhibition sense in which it is here used means the placing of objects in position for exhibition. It does not in any sense refer to the system according to which they are grouped and located in the building, but to the setting up in stands or show-cases.



erous and tasteful style of arrangement and installation pervades the agricultural halls and the special exhibitions. In the latter the visitor is not so much impressed by elegant show-cases as by the very effective manner in which the objects are grouped and arranged. Even the simplest objects, such as specimens of wood, of grain, of ores, and of iron and steel, become attractive to the eye chiefly for the artistic manner in which they are displayed. There is in such work a great field for the exercise of critical and cultured taste. And it is a pleasant conviction that our people are not lacking in the possession of just the qualities which will induce them to make equally attractive displays when they come to rightly understand the spirit and objects of great universal exhibitions.

To attempt to describe in words the many and varied exhibitions of skill in the work of installation would be a failure. They must be seen to be appreciated. Photography alone or reproductions of outlines from photographs can alone partially supply the want. I therefore make reference to a series of photographs selected with reference to the illustration of this part of the report.

#### VARIOUS MODES OF INSTALLATION.

The nature of the goods to be exhibited necessarily determines in a general way the form and style of the case or support. Thus, for rich silks and woven fabrics, which must be kept from the dust, a broader, higher, and more ample show-case is required than is needed for jewelry or fancy goods.

We may specify the various forms of installation under seven heads:

1. Show-cases of whatever form inclosed with glass.
2. Open stands or shelving of whatever form.
3. Alcoves.
4. Canopied spaces.
5. Platforms with railings.
6. Inclosed courts or room-like space.
7. Trophies or displays.

We have also separate exhibitions, not in the principal buildings, but in isolated special structures erected for the purpose apart from the main buildings, and often at the sole expense of the company or individual making the exhibition. In such structures there may be found examples of all of the above-mentioned classes of installation, or, as is commonly the case, the objects are displayed along the sides on tables or on the walls, so that the whole building becomes a sort of show-case, into which visitors are admitted.

Of such classes of exhibitions there are several notable examples in the exhibition-grounds. I cite particularly that of the Prince of Saxe Coburg, of Prince Schwarzenberg, and of the Prince of Monaco. They are all charming *chef-d'œuvres* of installation and of judicious and sentient selection of objects. A special photograph of the first-mentioned is annexed. There is an octagonal central building with four wings and a continuous veranda around the whole. The outer walls are covered on one side with sections of the forest-trees of the principality, and on the other with samples of the cereals, grasses, and other agricultural products, and with collections of the agricultural implements and small manufactures of wooden ware. Nothing appears to have been forgotten. Every product, every art, and every industry finds in that attractive little building its appropriate place and recognition. Even the plants,



flowers, and forest-trees of the estate are shown growing in the parterres around the building. It may be regarded as a typical model effort of its kind, worthy of close imitation.

We may look to State effort and to great corporations for similar results in 1876, but in no case are such exhibitions to be permitted to prevent a proper display of just such objects as they include under the appropriate heads and in the places assigned to them under the system of classification.

The unity of the exhibition, and of the system of representation, must be preserved scrupulously, and all special exhibitions, in separate constructions, can be permitted only as *additional* and beyond the usual systematic display. In Prince Schwarzenberg's special exhibition, for example, there is a fine exhibition of graphite, in its crude and its manufactured state, but this is only a duplicate of the exhibition he also makes in the Austrian department of the main industry-palace.

1. *Show-cases and their various forms.*—It is well to analyze, in a general way, the forms and various styles of show-cases. Their forms are not as intricate as their elaborate ornamentation and the diversity and richness of their contents lead most persons to suppose. The ground plan, or the outline of the base upon the floor, may usually be reduced to two simple fundamental forms, the square and the parallelogram. Circular cases are rare. The departure from the rectangle is usually by cutting off the corners; thus making an octagonal base, this being the nearest approach to a circle.

In elevation there is of course a much greater variety of form. It varies with the nature of the objects the cases are intended to contain, and with the taste of the exhibitor. The position also has to be taken into consideration. A wall-case is finished in front only, while those which are to stand alone must be finished on all sides. The glazing may extend to within a few inches of the floor, or be confined to the upper portion of the case. The usual practice here is to have a paneled base about two feet high, fitted with doors, so as to give stowage-room. Some of the cases are open below the glass, and are supported on legs or carved stands. The annexed outlines will serve to illustrate the prevailing forms.

Some of the finest samples of show-cases, as well as the most costly, are to be found in the Austrian and British sections. In the latter the case of Messrs. Elkington & Co., silver and plated ware, is the most valuable. It cost £1,600, and is from the establishment of J. Drew, Hatton Garden, London, who also furnished many of the other principal cases in the British section. It is made double, the front and back being of plate-glass, and it has the form of a hollow square, so that a space or court some 15 feet square is inclosed.

There are two doors or entrances to this court, on opposite sides, closed by an ornamental railing. The interior has a raised carpeted floor and is furnished with divans for special visitors. It is a choice, retired spot, away from the crowd, and under the control of the exhibitor. It is adorned with some of the choicest artistic work of that celebrated house.

In order to illustrate the general style and form of the better class of show-cases, I have procured, and forward as a part of my report, a series of designs with dimensions copied from working drawings of show-cases. I am indebted to Mr. Drew for permission to make copies of these designs, which are all new and were made by him expressly for the Vienna Exhibition.

The height of the principal cases in the exhibition does not usually



exceed ten feet, but in the French and Austrian sections cases fifteen to twenty feet in height are common. The architectural beauty of the designs for the frames, bases, and the cornices show that first-class talent has been employed upon them. The prevailing styles are the Corinthian and composite, and the color usually is black, with gilded trimmings. The material used for the frames and columns is either wood, steel, or wood and zinc combined. Plate-glass, about the time of the opening of the exhibition, nearly doubled in price,\* in consequence of the great demand for it for the cases of the exhibition. Either ebony, mahogany, pear, or pine wood is used in preference to any other; the two last, as well as mahogany, are stained in imitation of ebony. Pine answers remarkably well, and is much cheaper. It is primed with a coat of lamp-black and glue or dead-black varnish, and cases so finished off would, by most persons, be thought to be ebony. But mahogany and pear-tree are the best substitutes for ebony, and make stronger frames than pine. Both of these woods take the black stain and a high polish remarkably well, and have all the appearance of ebony.

Among the many beautifully made and decorated show-cases, that of Weidman, the manufacturer of fancy leather-goods, may be particularly noted. It is adorned with white arabesques upon the black ground of the case, and appears to be inlaid with ivory. These arabesques are said to be drawn upon leather. The large dealer and manufacturer, Klein, also has very costly cases.

An elegant octagonal show-case, containing a very artistically arranged exhibition of cotton and cotton yarn, as used in spinning and weaving, is placed in the rotunda by Breiller & Co. This is such a fine example of tasteful installation that I append a photograph of it. The drapery at the base of the pyramid is made of light-blue satin. (Photograph No. 411.)

Photograph No. 510, also annexed, gives a very good view of several different styles of cases and methods of installation. It represents the groups of apparatus for physical research, for telegraphy, &c. Another interesting example of installation is shown by photograph No. 429. It is a square case, containing fine leather, standing upon a low platform. Beyond it is the remarkable exhibition of stearic industry in a monumental form, surmounted by a bust of De Milly.

2. *Open stands or shelving.*—For all articles such as porcelains, glass ware, iron castings, &c., which do not suffer by exposure to dust, open cases answer very well, and, of course, are much cheaper than those with plate-glass sides. Their forms are various. Usually there is a square or rectangular counter-like base, forming a broad, flat top, above which shelves are supported on brackets. The annexed outlines will give an idea of many of the forms in use.

3. *Alcoves.*—Alcoves formed along the center of the grand nave of the industrial palace are common, particularly in the French section. They are made by erecting a central wall of boards with a ceiling or roof projecting about eight feet on each side, and supported by a line of columns in front. These columns serve also to sustain the low partitions which separate the spaces allotted to exhibitors.

At night a curtain is let down from the top, and completely closes the front of the alcove, so that dust is excluded. Such alcoves are about 10 to 12 feet long and 15 to 20 feet high. They are occupied chiefly by French bronzes, gas-fixtures, and fancy enamels. The compactness and

---

\* The breakage of glass was enormous. Several thousands of pounds-sterling worth was broken in the British section alone.



uniformity of this installation is pleasing in contrast with the great diversity of form of the cases in the other departments. The construction of these alcoves is simple and not expensive. Rough pine boards may be used for all of the parts except the cornice-columns and pilasters. A covering of thin maroon-colored stuff hides all imperfections of the back-ground.

4. *Canopied spaces*.—These differ from the alcoves simply in being open on all sides, the roof or canopy being supported by four posts, instead of two posts in front, with a partition in the rear. The frame of the canopy is usually festooned with cloth, cords, and tassels. It is customary to have a carpeted platform, from which the crowd is excluded by a cord supported by posts, or by a light, perforated railing. One of the best examples of such canopies is shown on photograph No. —, representing the collective exhibition of porcelain, &c., from Dresden. It is in the main nave at the entrance from the rotunda, and is a conspicuous object. The counters and hangings are upholstered with crimson cloth, fastened with large gilt nails and golden cords. The great expense of this stand is divided *pro rata* among the exhibitors, according to the space they occupy. There is in the same picture a good example of an octagonal glass-case, and of a pyramidal one, covering a piece of highly-wrought metal-work. In the back-ground there is an upholstered archway in crimson and gold, marking the limits of the Prussian exhibition in the main nave.

5. *Platforms with railings*.—The use of platforms, rising from 8 inches to 16 or 20 above the general level of the floor, is much in favor with American exhibitors, but they are rarely used by exhibitors from other countries. The object of these platforms appears to be to show the exclusive occupancy of a certain space, which is generally more than the size or form of the objects shown actually require. We see the most notable examples in the American part of the agricultural hall, where all of the machines on one side are arranged on platforms handsomely carpeted and spaced off by silken cords drawn through iron or wooden standards. The access of the public generally to the machines is thus prevented, and it is questionable whether it is true policy to keep people at a distance in this way. The use of platforms for the support of glass cases much smaller than the platforms is decidedly objectionable, particularly along the passage-ways or galleries. They obstruct circulation and cause people to stumble, thereby endangering both the visitor and the glass cases. There is, again, an economical consideration. If the exhibitors generally erect platforms, the first heavy flooring laid down by the exhibition commission might be dispensed with.

6. *Inclosed courts or room-like spaces*.—This style of installing objects is adapted particularly for the display of the interior decoration of halls, dining-rooms, saloons, and other apartments, and also for displaying rich furniture and upholsterers' work.

In many instances exhibitors have placed show-cases or stands at the four corners of a square or rectangular space, as for example the Elkingtons' case, in such a way as to form an inclosure within which they have a central table with chairs for the convenience of visitors and purchasers.

7. *Trophies*.—These are attractive and desirable in the main avenues of entrance, or as center-pieces of special exhibitions about which, as center-pieces, other articles are grouped.

Many manufactures which are not specially attractive in their appearance or forms, become so when they are tastefully grouped in pyramids or upon upon the walls; as for example, iron rods and bars, railway-iron, mining tools, shovels, car-wheels, axles and tires, &c., &c.



There are many fine examples throughout the exhibition of such artistically arranged displays. The cotton-bales sent from Louisiana make the foundation of a high pyramid of that material, hanging in festoons among plows and other agricultural implements, and surrounded by a stack of sugar-cane and flags.

In the agricultural hall there are many very attractive exhibitions made by the wine-producers and by the manufacturers of canned vegetables and fruits. Pyramidal stacks of champagne-bottles are adorned by artificial grape-vines, bearing large clusters of white and purple grapes, as roughly indicated in the annexed pen-sketch, but shown with accuracy in photograph, (No. —, Spanish section.) Photograph No. 180, agricultural hall, "Belgium and the Netherlands," shows several different styles of cases of stands, and of the ways of exhibiting wines and cereals. For the exhibition of wheat and other grains glass jars of large size, with the openings at the base, are generally made use of. A very methodical and neat display of grain and flour and other agricultural produce is made by the Vienna Fruit and Meal Bourse. (See photograph.)

#### METHODICAL EXHIBITION BY LARGE IRON-WORKS.

Creusot, 40 by 20 feet. (Machinery-hall.)

Bochum.

Stiermark. (Special building.)

Karnther. (Special building.)

Krupp. (Special pavilion.)

Prussia, Russia, Sweden.

The exhibition of iron and of steel were remarkable for their extent and perfection, and for the tasteful manner in which the objects were arranged.

The Creusot collection in the machinery-hall was a notable example of completeness, compactness, and elegance. It occupied a space of about 40 by 20 feet, and yet contained a very large locomotive, a steam-engine, car-wheels, samples of forging and bending, and numerous *tours de force*, besides a complete suite of the ores, fuel, slags, and the various grades of iron and of steel, with hundreds of samples of steel bars bent and broken under stress. There were also water-color drawings of large bridges, and other work executed by the firm, and a large map of the works and a general view. The space between the cases was carpeted, and an agent was in attendance to give information to those who sought it.

The three special buildings devoted to the Prussian exhibition in Group I, mining and metallurgy, together with Krupp's special building, were good examples of effective display of such objects. The general ground-plan of these buildings, showing the size and arrangement of the cases, is annexed. Each building was about 200 feet in length.

The Burbach iron-works built a frame of peculiar construction for the support of the assortment of long iron girders which they sent in. Stone piers were built up below the floor, and the iron supports were bolted to the cap-stones.

#### ORGANIZATION OF THE INSTALLATION BUREAU.

The installation bureau at Vienna had one administrative chief, Herr Professor Hornig; and at the head of the technical department, Architect Herr Weber, who had six to eight architects under his direction as assistants. Mr. Weber's duties from the first were to confer with the commissioners of the different foreign countries, to find out how much



space, both of ground-space and wall-space, they required. In his office all the available ground and wall space was drawn upon a map on a large scale and properly calculated. After sufficient space had been allotted by Weber, Professor Hornig instructed the exhibitors how they were to display their goods, and where, so that the proper passages and ways of communication about the building were maintained. Regard ought always to be had in arranging the show-cases to the convenience of overlooking them, so that the police can have full view of the crowd in every direction, especially where articles of great value, such as diamonds, jewelry, &c., are exhibited.

The desires of the exhibitors have been complied with as much as possible in the arrangements for the display of their articles, but there are many questions which have arisen which have had to be referred to other officers, such as the imposition of enormous weights, as, for example, safes, iron rails, &c., on certain spots, or the hanging of extremely heavy articles from the ceiling, such as chandeliers, heavy carpets, &c., or the opening through walls of doorways not existing in the original design. All such questions as these were referred to Mr. Schmidt as engineer of construction.

This question of installation is one which must not be lost sight of by the engineer and architect or the designers of the exhibition-buildings. In all cases provision ought to be made as regards strength, not only for the stability of the structures themselves, and for the moving masses of people which will pass over the floors, but also for the possible imposition of an object of enormous weight, or the suspension from the roof of the structure of articles equally as heavy.

Every country here had its own installation bureau, and was allowed full scope. Cases and installations are very often put up by the separate commissions, and are occupied by five or six or up to twenty different exhibitors. The best upholsterers, decorators, and carpenters are employed for this work; also architects and case-makers. As soon as the case is finished and the cost known, it is divided up between the exhibitors proportionately to the space occupied by each. These are called "collection exhibitions," and are usually goods of like nature, such as all jewelry, all porcelain, and glass ware, or all dry goods, silks, &c. The chief object of these associations is to produce a showy case and handsome effect at a moderate cost to each individual exhibitor.

The manner of arranging the goods inside the cases is left entirely to the taste of the exhibitor, but one of the installation officers says that more than once he has had removed articles unworthy of exhibition, or articles displayed which did not belong to, or were not produced by, the country in which they were offered for exhibition.

#### REGULATIONS RELATIVE TO INSTALLATION.

The official regulations issued in January, 1872, (Nos. 19, 20,) in regard to the assignment of space, required a plan drawn to a scale, to be sent in, at the latest, by the 1st of January, 1873, showing the subdivision among the exhibitors of the space granted to each country. The exhibitors were not to be required to pay the expense of a boarded floor or to contribute to laying out of the adjoining gardens, as at Paris; but instead thereof a total sum was exacted of each foreign nation for the total superficial space allotted to it in the industrial palace and machinery-hall, with a given fixed ground-floor, and calculated by the square meter.\*

---

\* *Vide* chapter on regulations, &c., *infra*.



## REGULATIONS AT THE PARIS EXHIBITION.

In Paris, in 1867, the responsibility of the labor of installation was placed upon the commission from each country, but the imperial commission reserved to itself the surveillance of the work in order to secure harmonious results. In the French section the work was distributed among syndicates elected for each group, or class of products, by the exhibitors, with the concurrence and advice of the committees of admission. General rules were established not only for the French section, but for the whole. The commission, for their general supervision of the work, organized three principal services: one for the foreign sections, one for the French section, and one for the machinery-gallery. A fourth service was organized for the decoration of the outer gallery, and other committees were organized and empowered, as necessity required, for special work.

The main avenues of entrance and the chief radial avenues were ornamented at suitable points by some of the most elegant objects from each group. There are many choice objects which appear to much better advantage when set out singly, with a broad passage-way about them, than they do in a gallery in close proximity to other objects. Here in Vienna the same idea finds expression in placing some of the choicest objects in the rotunda and along the main nave of the industry palace, but in both cases the objects are too much crowded. There is not sufficient room about them, and the discordance between objects totally dissimilar is very objectionable. In radial avenues crossing the several groups selected objects may be placed by themselves, and yet be in the zone of the groups to which they pertain. But in the Vienna building such grouping was not possible.

At Paris the hanging of pictures and all the furnishing of the fine-art gallery was at the expense of the imperial commission; so also was the labor and expense of unpacking and placing the collections in the gallery of the history of labor.

## NECESSITY OF TIME FOR INSTALLATION.

In neither of the great international exhibitions has there been sufficient time allowed for the work of installation. The difficulties and the importance of this branch of exhibition-work are apparently soon forgotten, and the same costly and annoying experience is repeated at each succeeding exhibition. The work requires deliberation, care, and the exercise of taste and skill. If the work is crowded into two or three weeks, or a month, it becomes almost impossible to find the needed workmen. All are engaged, and at double wages. It is wise economy, therefore, to begin in better season, and to have at least double or treble the time usually allowed by the most prudent hitherto. In Vienna the official regulations allowed only five weeks—from February 15 to April 25—for the active work of installation. This was manifestly too short a period. Goods were, however, to be admitted by February 1. The result is well known. On the day of opening not one-third of the objects had been properly placed, and the work of installation extended through the months of May and part of June, so that the exhibition was not fairly ready until the middle of June. In consequence it lost the prestige of comparative perfection, and failed to produce a favorable impression at the first. This, considering the short period of six months allowed to the exhibition, is a vital defect, operating most injuriously to the success and usefulness of the whole.



The French commission, in 1867, urged upon foreign commissions the importance of having their show-cases and all constructions for mounting and displaying their products made in their respective countries, and that they should send their own workmen to put the cases together and place their products at the exhibition. This was done extensively at Paris and also at Vienna.

As proposed in the draught of regulations reported to Congress\* in February last, the buildings should be ready for the interior work of installation before November, 1875. The work of receiving and placing objects should then commence in earnest. All the heavy objects should be received and placed, and the construction of the show-cases, courts, platforms, trophies, &c., should proceed vigorously, so that the greater part of the objects could be secured and installed long before the 1st of April. Even a longer period, and in more favorable weather, than is here proposed is desirable. Less time will not suffice. I have already, in my weekly reports of progress, described in some detail the deplorable condition of affairs just before the opening—the delay, confusion, and waste incident to hurried installation—and it is not perhaps advisable to repeat the facts here. They all teach one lesson: take even twice the time and have even twice as efficient an organization as at any other exhibition, and there will not be an hour to spare.

One important practical suggestion has grown out of the exigencies of the work in Vienna before May 1. There was great need of power-machinery for working wood. A typical sawing and planing mill on the ground at Fairmount Park, and intended to form part of the exhibition, would be of great service from the very beginning of operations. As the installation progresses the means of cutting and shaping boards and timber must be had, and great losses of time and money would be prevented by having a good job-mill on the ground. The same may be said in favor of having a forge and machine-shop, and of a stock of small hardware and ordinary tools within easy reach of the thousands of persons who will be actively working on the installation.

The advisability of our commission assuming the care and responsibility of providing cases and protection for foreign goods and perhaps for all exhibitors is suggested. It might be desirable to have cases made by the quantity, in a plain uniform manner, and rent them out to exhibitors. Instead of charging for space, as is done here, a small charge might be made for the use of a show-case according to the space occupied. We shall need to offer all possible inducements to secure a complete representation of the industries and manufactures of Europe, and this might be one that could be offered.

A good systematic classification and plan of arrangement simplifies and lightens the work of installation. It makes a place for everything, permits of organized effort, and saves confusion and wrangling. But to secure any such, or other benefits from the classification, the construction of the buildings must be subordinated to it. In other words, the building must be made to fit the objects it is to protect. It must not be a procrustean bed for the utter destruction of a well-devised plan. To make the building first and the plan of the exhibition afterwards is to reverse the logical order of things. The building is not the exhibition, it is to protect the exhibition. At Vienna, the building did not recognize or permit of the installation of objects upon any system except that the machinery was in one building, the agricultural machinery in another, and the remaining objects in a third.

---

\* Forty-second Congress, third sess., Mis. Doc. No. 99, p. 16.



## EXPENDITURES BY THE NATIONS.

A large part of the money appropriated by the nations for the exhibition is expended in the work of installation. I include in this the special exhibitions and the buildings for them, such as the palace of the Viceroy of Egypt, the exhibitions by Prince Schwarzenberg, Prince of Saxe-Gotha, and others. Some of the nations have been extremely liberal in this way. Turkey, it is said, appropriated £100,000 and Egypt £100,000, or equivalent to \$500,000 each; the United States appropriated \$200,000, and so on. In some cases a very large part of these appropriations is devoted to decoration and to the erection of arches and other constructions to mark the entrances to their sections or division of the exhibition. An example of such an arch erected at the entrance to the Denmark court is here shown by photograph. Another, in the main nave between Prussia and France, has been mentioned.

## CONDITION OF THE INSTALLATION AT THE OPENING-DAY.

(*Extract from the preliminary report, April 15, 1873.*)

This great and laborious part of the enterprise should now be nearly or quite completed in order to open the exhibition with *éclat*, according to the programme, on the 1st of May. When I arrived I was astonished to find that the work had only just commenced. I may still say that it is only begun! Chaos reigns where order is expected. The work is two months behind. No amount of effort, no money, can receive, distribute, open and unpack the cases in time. It is a great disaster, and is a great lesson to us, yet an often-repeated lesson taught by each exhibition in succession. Want of time! Not enough time allowed for construction, not enough for the transportation and reception of goods.

The loss to the exposition, the delay of the work, is a gain so far as my mission is concerned; for the whole experience of the installation may be had. The work is very instructive, but has not progressed far enough to allow me to report upon it in time for the May meeting of the United States Centennial Commission. It will require my close attention from this time onward, probably until the 1st of June, or later, for I fear that day will not find all the articles duly placed.

Some preliminary statements of the present condition of the work will, however, be instructive; and may serve to impress upon the commission the vital importance of the early commencement of the work of construction of our buildings, of their early completion and the early reception of articles, some of them months before the exhibition is to be opened.

It was only in the last week of March, and the first week of this month, that merchandise began to arrive here in quantity for the exhibition. Since then it has been concentrating rapidly, much to the embarrassment of all concerned. The Northern Railway has been blocked for several days. Four hundred freight-cars are jammed together, and still others come. The road from Trieste, fortunately, not being so much crowded remains open, and several trains loaded with the cargo of the Supply, recently arrived from the United States, were *en route* last night, (14th.)

The work of installation of machinery is yet far behind. There are but few pieces of machinery yet set up, and much of the shafting is yet to be hung. Mr. Pickering, the American machinist, is here, and is now actively engaged in preparing the United States section of the machinery-hall for the reception of the machinery.

Much anxiety and delay have been caused in the installation work of the United States section in all of the departments, by reason of the absence of any plan drawn to a scale of the space assigned to the country, with the portions of space allotted to each exhibitor marked off upon it, as was required by the circular-letter of the general director, No. 20, in which each foreign commission was enjoined to have such plans ready before the first day of January, 1873. No such plan has, up to this time, been sent in or exhibited, by the United States Commission; and the exhibitors who are here and ready to commence the construction of cases and foundations for their goods are obliged to wait.

In the British section nearly all of the spaces allotted were first marked off on the plans, and from thence were marked off upon the floor of the hall. In walking through the British section one sees everywhere, in red lines painted upon the floor, the exact size of the base of the case to be erected upon that site, and the name of the person to whom the concession has been made. This system is very convenient and satisfactory to the managers and exhibitors, and saves much confusion and delay. It is diffi-



cult, especially in the United States, to obtain a full response to the invitation to exhibit in season to permit of this way of allotting and indicating the space, but it should be insisted on as far as it is possible to enforce it. The merit of the system is very clearly shown at the present time in the building where the British exhibitors or their agents are progressing favorably in the erection and placing of the cases, while in our section no exhibitor yet knows where to begin to work, and not a single case is in readiness to receive goods. The floor has first to be marked off according to a pre-arranged plan. Similar embarrassment and delay occurred from the same cause in Paris in 1867. At that exhibition the imperial commission required each committee of admission to have a plan prepared upon a scale of 0<sup>m</sup>.020 to the meter, indicating exactly the partition of the space among the exhibitors in the respective groups. Conferences were held upon the subject of the form and style of the cases, the effort being made to adapt them to the nature of the objects to be exhibited, and to secure such harmony in the form and decoration as would produce the most satisfactory effects. So far as yet appears, little or no attention has been given to this subject here, and the stall-like constructions which I see looming up in the center of some of the transverse halls cause me to fear that the general effect will be, in very many places, greatly impaired by such constructions.

The construction of cases is a very important matter connected with exhibitions, and they cost no small part of the whole outlay. Large establishments in England already have their agents here who are prepared to supply cases out of stock at a few days' notice.

#### GENERAL REMARKS ON INSTALLATION.

The true spirit of exhibitions does not require great sacrifices of money on the part of exhibitors for the sake of making a dazzling display of their objects. Costly cases, though attractive, and not to be rejected, are not essential for the majority of articles that represent the industry and the resources of a country. Skill and good taste, both trained by experience, have here produced very pleasing effects and at comparatively little cost. The forestry and agricultural exhibitions are conspicuous examples; so also are those of wines, preserved fruits, chemical products and minerals. The series of photographs of the interior of the several departments of this exhibition, as well as those of the Paris Exhibition of 1867, may be studied with much profit by the intending exhibitors in 1876.

#### DR. EXNER ON INSTALLATION.

(A free translation of an article in German.)

Hundreds of experienced men are now engaged with critical examinations of every detail in the separate groups of the Vienna Exhibition, in order to publish the results of their observations in a comprehensive manner, but they will not be influenced solely by the contents of the show-cases, but also by the form and style in which the objects are exhibited. The installation having great influence upon the æsthetic sense, requires a careful and earnest examination, particularly as such investigations would prove of great benefit in future exhibitions. Upon whichever basis future expositions are organized, the business, the technical part of exhibition systems, will always remain an important question.

The installation of an exhibition is a technical problem which to solve requires as much knowledge and experience as any other technical problem. In spite of the tremendous magnitude and the great number of such undertakings the exhibition system has, in a technical sense, not yet reached perfection. The Vienna Exhibition proves how dangerous amateur proceedings are in such important work. The peculiar charm in the life of an exhibition official, the possibility of satisfying one's ambition in a short time with comparative little exertion, calls forward a great many ambitious individuals. Of such persons everyone believes himself to have been born with special genius for such work, and through such amateurs and volunteers the technical part of an exhibition is endangered. It is a work which can only be mastered



through knowledge, skill, and experience. The principles and rules may be simple enough, but they must be understood to apply them well.

The business or art of installation is important enough to be discussed at a public meeting, and, like the contents of the exhibition, to be discussed and considered from every point of view in order to secure the best results in the future. The few rules which will now be brought forward, are abstracts of the exhibition experience for the last ten years. The general public does not yet understand these principles and feels only the results of the installation. The visitor experiences discomfort, fatigue, and even physical pain in studying an exhibition without knowing why. He might instead be at ease and be satisfied and instructed without knowing why.

The installation of an exhibition is divided in two principal groups, the distribution of space and selection of colors. To these belong a third, artistic decoration. In regard to the distribution of the existing space, the arrangement of buildings is the first consideration. Next is the arrangement of the plan of the separate buildings in the exhibition-grounds, and thirdly the assignment of space for objects, like tables, for wall-cases, and for objects to occupy space on walls. Regard must be had to the nature of the object in assigning it space. The question must be decided whether horizontal, vertical, or other inclined surfaces should be used, and also the manner of arranging these spaces, whether through tables, counters, steps, pyramids, &c. All these matters are influenced by the size of the place, the number and kind of objects, the number of exhibitors, the existing capital, and finally by the duration of the exhibition. The more that is known of these essential conditions, the less difficulty there will be in making the proper installation.

If, as in Vienna, one is uncertain, even at the last moment, about the proportion of space required for different groups, or, as in former exhibitions, the administration is to receive an increase of space, or of capital, at a time when the installation has already begun, then confusion is the result, for which technical men cannot be made responsible. With regard to the selection of size of horizontal cases, we have a number of established rules. The height of a table-case above the floor should be 0.8 meter. The height of cases depends entirely upon the stand-point from which they are to be viewed. This point may be considered to be about the middle of the open space between the cases.

If the passage way is three meters wide, the visitor generally stands  $1\frac{1}{2}$  metre from the object exhibited. The height of cases should in such cases be 2.6 meters. If the visitor stands three meters distant, the height should be 3.5 meters. The average height of the eye is here accepted as 1.5 meter. The inclination of counter-cases should never be more than fifteen degrees from the horizontal. If a counter stands against the wall the side against the wall should be one metre above the floor, and the front side 1.2 meters from the wall. The middle line of double counters should also not exceed one meter above the floor, and the width on the surface not more than 2.4 meters. Shelves can be inclined on either side. Overhanging shelves are not as much used as they should be. They are excellent for installation purposes. It is also a rule that one shelf should never cover or hide another from view.

#### STORAGE OF PACKING-CASES.

There is a system of labeling cases and of recording them as they are delivered at the building. Storage has been provided for empty packages and boxes in the vicinity of the exhibition, and to these depots workshops have been added, so that all the packing-cases which require it may be repaired and put into perfect order for the reception of the

goods at the close of the exhibition. A fixed tariff of the charges for the storage has been adopted and published as follows :

*Tariff of charges for storing empty packages, including portorage and repairing.*

Cubic contents in meters.	Rent.	CHARGE FOR REPAIRING.		
		Slightly damaged cases. I Class.	Badly damaged cases. II Class.	Broken glass. III Class.
		FLORINS IN AUSTRIAN CURRENCY.		
Up to $\frac{1}{2}$	0.60	.10	.20	.40
" 1	0.80	.15	.30	.60
" $1\frac{1}{2}$	1.00	.20	.40	.80
" 2	1.20	.25	.50	1.00
" $2\frac{1}{2}$	1.40	.30	.60	1.20
" 3	1.70	.40	.70	1.40
" $3\frac{1}{2}$	2.00	.50	.80	1.60
" 4	2.30	.60	.90	1.80
" $4\frac{1}{2}$	2.60	.75	1.00	2.00
" 5	3.00	.90	1.15	2.30
" $5\frac{1}{2}$	3.50	1.10	1.35	2.60
" 6	4.00	1.30	1.55	2.90

The official contractor is accountable for all packing-cases except when damaged by fire or by unforeseen circumstances.

Applications for the return of packages with the exact destination must be made at the office of the warehouse.

All charges must be paid in advance upon the delivery of the voucher.

*Specimen of the record of the work of administration of the installation syndicate at Paris, in 1867.\**

Designation of the classes.	Area occupied.		Objects.			Expenses.		
	Palace.	Park.	Number.	Weight—tons of 1,000 kilos.	Value—frances.	General. †	Special to each exhibitor.	Total.
Class 54—Machine-tools.....	806	341	.....	618	822, 523	Frances.	Frances.	Frances.
Classes 55, 56—Spinning, rope- making, and weaving.	1, 895	.....	†862	300	400, 000	34, 118	12, 000	46, 118
Class 57—Sewing and making up clothing.	238	50	179	26	89, 375	8, 202	13, 224	21, 426
Class 59—Paper-making, dyeing, and printing.	538	468	.....	140	522, 350	25, 861	.....	.....
Class 60—Machines, instruments, and processes.	95	.....	67	19	82, 310	4, 418	4, 272	8, 690
Class 61—Carriages and wheel- wrights work.	408	148	240	80	383, 260	21, 984	.....	.....
Class 63—Railway apparatus.....	552	597	160	734	1, 069, 000	29, 594	79, 092	108, 686

\* From the report of the Imperial Commission, p. 44.

† The general expenses of each class comprise the preparation of the surface, (flooring or paving,) the balustrade around the class, the accessories of the general decoration, the expenses of surveillance and of the administration of the syndicate, and the expenses of the construction of the annexes of the park when the allotted spaces did not appear to the syndicate to be sufficient. The syndicate not only managed the general interests of the class, but it also undertook for those exhibitors who wished it special installation-work.

‡ This figure includes the boxes sent by the railway only.



INSTALLATION AND CASES.

IX.—GENERAL AND SPECIAL REGULATIONS AND ARRANGEMENTS FOR THE CONVENIENCE OF VISITORS.

The general regulations of the exhibition were published for the guidance of foreign exhibitors and commissions in programme Nos. 19, 20, January 27, 1872, (English edition.) Reference may be made to this for the details, which were in most cases adhered to.

Exhibitors were not required to pay for a boarded floor or to contribute to laying out the gardens, but paid for the space they occupied according to a fixed tariff. Each foreign nation paid for the whole space occupied and arranged in regard to it with its own exhibitors. The tariff per square meter was as follows:

	Florins.
In the industrial palace.....	10
In the machinery-hall .....	4
In the court-yards of the palace.....	4
In the park, open air.....	1
In the spaces covered at the cost of the exhibitor.....	3

Those who exhibited objects of fine art and who contributed objects to the amateurs' exhibition had no charge to pay for space.

The exhibition-grounds were considered as a bonded warehouse.

Objects exhibited could be removed before the close only by special permission of the general manager.

At the close, objects not removed before January 1, 1874, were to be sent to warehouse at the cost and risk of exhibitors, and finally sold, if not called for.

Foreign commissions were requested to send the necessary data for the catalogue prior to January, 1873.

Dangerous and inflammable substances were excluded.

All expenses of forwarding, unpacking, and placing objects were to be paid by the exhibitor. The period of admission was from the 1st of February until the 15th of April; but there were many exceptions in favor of those whose goods arrived late. Exception was thus made in favor of the United States and of other countries.

Exhibitors were to insure their objects if they wished, at their own expense. So also with works of art, the responsibility and expense of insuring was left to the respective foreign commissioners. No charge was made for space in the art exhibition.

In the art-exhibition the local arrangement was geographical, and, as far as possible, the works of different countries were in different rooms. All copies, as well as any pictures not properly framed, were excluded. Round or oval frames were not received.

General and special regulations were issued in regard to nearly every department of the exhibition in connection with the printed programmes relating to such department. This was the case especially with the departments of agriculture, forestry, and horticulture, and the exhibitions of cattle and of horses.

For the machinery-hall special regulations were issued March 15, 1872, in programme No. 49.

Exhibitors of machinery were required to state in their applications the length and breadth of space required in meters; the actual horsepower required; the quantity of steam; quantity of water, and quantity of gas required per hour. The power was supplied without charge. Exhibitors furnished all pulleys and belting at their own cost. The main lines of shafting were erected and kept in order by the imperial

commission. Railings around machines in motion were required. A small workshop was erected on the grounds for the convenience of the exhibitors, and was found very useful. One upon a larger scale, and with a variety of machine-tools, should be established at the exhibition-grounds, Fairmount Park, before the construction commences; and a shop for sawing, turning, and planing wood is also desirable, and would be well employed during the season of construction and of installation.

Special regulations were issued from time to time, according to circumstances, and all announcements to the public were conspicuously placarded upon bulletin boards along the avenues leading to the exhibition, and were published in the exhibition paper.

#### FORWARDING, RECEIVING, AND ERECTING OBJECTS.

The following are copies of the imperial regulations relating to forwarding, receiving, and erecting objects designed for the exhibition:

(See rules 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 39 and 40 of the general regulations issued by the Austrian Commission, 1873.)

#### TIME OF OPENING AND CLOSING.

In the month of May the exhibition was opened to visitors at 10 o'clock in the morning and closed at 6 o'clock in the evening, until the 25th, when the doors were opened an hour earlier, or at 9 a. m. In June and July the doors of the building were closed at 7 p. m., but visitors were allowed in the grounds until 10 p. m. In August and September the building opened at 9 a. m. and was closed at 6 p. m., and no one was allowed to enter the grounds later than 7 p. m. The grounds and restaurants were lighted with gas, but no lights were permitted in the exhibition-buildings.

#### CUSTOM-HOUSE REGULATIONS.

By a decree of the ministry of finances, dated August 9, 1872, repertory of laws, (*Reichsgesetzblatt*, part xiv, page 380, No. 127) the exhibition-building and its precincts were made a bonded warehouse. That decree is as follows:

No. 63.]

#### UNIVERSAL EXHIBITION, 1873, IN VIENNA.

##### *Custom-house and excise regulations for foreign exhibition-goods.*

1. The frontier custom-house offices have to dispatch direct, without opening, the packing-cases and parcels, with advice or way-notes, and the custom-house seal attached either to the cars, or to the parcels, all exhibition-goods arriving accompanied by due certificates of admission from the respective foreign exhibition-commissions, to the delegate of the chief custom-house office stationed in the exhibition-grounds.

A list with details of contents of the packing-cases and parcels furnished for each consignment by its exhibitor must accompany every advice or way-note for the goods.

2. The exhibition custom-house office examines and removes the seals of each consignment and books all the lists specifying the goods arriving with the advice or way-note, and delivers the goods to the respective foreign commissions whose duty it is to keep an exact account of the goods handed over to them, and to submit the same, when required, to the custom-house authorities for inspection.

3. The list of details of contents which is to accompany each packing-case and parcel need not contain a description of the goods such as is required by the customs tariff; it will be sufficient that the goods are specified according to their commercial denomination as to kind and quantity.

It will be the duty of the exhibition custom-house office to complete the lists of details, by the addition of the exact tariff classification to which the goods belong, and to make the entries in the register in accordance therewith.

4. No goods are permitted to leave the exhibition and its precincts without a proper pass. Such pass will be issued by the commission of the country whence the goods have been sent, and must have attached to them, in order to make them valid, the seal of the exhibition custom-house office, in proof of having been officially dealt with.



The pass for foreign goods will be distinguished by a different color from that for inland goods.

5. Goods which are being sent back to the foreign countries must be directed by the exhibition custom-house office to the respective frontier custom-houses and accompanied by an advice or way-note.

6. For goods which remain in Austria-Hungary and within the excise-district of Vienna, import duty, and respectively excise duty, must be paid according to the charges which will be made by the exhibition custom-house office, after examination of the goods.

7. The exhibition-goods and the owners of the same are held answerable, in the first instance, for the custom and excise duties; and in the second place, the responsibility devolves upon the respective foreign commissions.

The responsibility is transferred to the forwarding agents when they take charge of the goods.

8. Unexplained discrepancies between the actual contents of the packages and parcels as to the quantity and kind of the goods and the list of details, as well as the unauthorized removal of goods from the exhibition buildings and grounds, and also the unauthorized sale or disposal of goods in the exhibition buildings and grounds, will be dealt with according to law.

9. Tobacco, and goods manufactured of tobacco, are not permitted to be sold in the exhibition-buildings, nor are they allowed to be removed for such a purpose from the place of the exhibition.

10. Foreign exhibition-objects which have not been presented to the exhibition custom-house office for the purpose of obtaining the necessary orders for their exportation within three months after the close of the exhibition, will be liable to the payment of import duty, and if they are subject to the excise duty, to the payment of the same likewise.

(Decree of the ministry of finances, dated August 9, 1872, No. 127, repertory of laws, [Reichsgesetzblatt] part xlv.)

It was part of the duty of officers on watch at the exit-gates to examine every package or parcel taken out, to see whether it contained dutiable articles, or whether accompanied by a pass or not.

#### FORM OF WAGON-PASS.

The annexed is the blank form of a pass for a loaded wagon in duplicate, the stub or duplicate being retained in the book, and its number in manuscript corresponding with the number of the pass issued. It will be noted that the number of the gate by which the vehicle is to go out is specified, and the nature of the goods, for whom destined, and the name of the driver. It is dated, signed, stamped, and sealed.

WELTAUSSTELLUNG 1873 WIEN.	WELTAUSSTELLUNG 1873 WIEN.
Ausgang beim Thor Nr .....	Ausgang beim Thor Nr.....
<i>Passirschein</i> Nr. 21601 .....	<i>Passirschein</i> Nr. 21601.....
Für.....Wagen beladen mit .....	Für.....Wagen beladen mit .....
.....	.....
bestimmt für ....	bestimmt für.....
Name des Fuhrmannes .....	Name des Fuhrmannes.....
Name seines Kutschers .....	Name seines Kutschers.....
Ausstellungsplatz im Prater,	Ausstellungsplatz im Prater,
am.....187 .	am.....187 .
(Unterschrift.)	(Unterschrift.)
	(Siegel.)

MEMORANDUM OF SALES.

The following is a copy of the blanks used in the custom-house as a memorandum of sales made in this case by the Japanese, stating the object and its destination. Size of ticket, 4½ by 3¾.

WELTAUSSTELLUNG 1873 WIEN.		WELTAUSSTELLUNG 1873 WIEN.	WELTAUSSTELLUNG 1873 WIEN.	
Nr.....			Nr.....	
JAPAN (PARK.)			JAPAN (PARK.)	
Verkauft:			Verkauft:	
Object:.....			Object:.....	
.....			.....	
.....			.....	
An Herrn .....			An Herrn.....	
Adresse:.....			Adresse:.....	
Wien, den			Wien, den	
		Dieser Schein ist behuffs Legitimation aufzubewahren.		

CERTIFICATE OF DUTY PAID.

Annexed is the form of certificate of duties paid, or “Zolb-quittung.” It appears to be the same as those in general use at the custom-houses, but is stamped Weltausstellung in colored ink.

Provinz:		Nr.	des	{	Magazins-Buches.
K. K.	Zollamt			}	Waaren-Protokolls.



ZOLL-QUITTUNG NR. 2620.

Am 28-10, 1873, um		Uhr	Mittags	Entrichtete Gebühren.	
entrichtet Maiquez		von		fl.	kr.
laut		Register			
für Waaren im	{ Ein- Aus- }	gange	{ aus nach }	Eingangs-Zoll .....	1 17
				Ausgangs-Zoll .....	
auf				Durchfuhrs-Zoll .....	
als: 35-10. H. Watson. Mittalf, E. G., II, b.				Waggeld .....	2
				Zettelgeld .....	
				Siegeltaxe .....	
				Lagerzins .....	
				Zollzuschlag .....	
				Tabak-Licenz .....	
Giltig zum Transporte:					
im Grenzbezirke über				Verzehrunstener ..	
nach	binnen	Stunden		Gemeinde-Zuschlag .	
und im inneren Zollgebiete über					
nach	bis			Zusammen .....	1 19
					10
					1 29

Et. 120.

A. Nr. 76 a. Streng verrechenb. Drucks. 1873. Muster 16 zum Amtsunterrichte

THE TASTING-HALL.

Provision was made for the erection of a "tasting-hall" in which exhibitors could sell small portions of their wines, beer, or edible products, under strict rules, which were published in programme No. 65. It was in fact a great refreshment saloon, or a series of bars in alcoves, side by side, where the viands of almost all countries were retailed. There was only one main passage-way or hall for the public, and all chairs or seats were strictly excluded. The smallest compartment or alcove had a counter two meters long. The rent, 200 florins per meter, was paid in advance at the time of application, and only exhibitors were allowed to rent compartments. The sale of produce not exhibited was prohibited, and also beverages on draught. Only such articles were admitted and sold as were capable of being stored in the ordinary way of trade, such as bottled wine, liquors, preserved fruits, and canned meats and fish. The

regulations even prescribed the maximum of a "drink." For wines it was not to exceed 0.044 liter, and for liquors half as much.

The duty on all articles liable to it was paid in advance. One advantage the exhibitor had was the reduced freight on all goods intended for the exhibition or the "tasting-hall."

Water was supplied by hydrant to each alcove, but all other fittings, furniture, or any decorations were to be supplied by the tenant. No underletting was permitted, and compartments not occupied for three weeks were relet.

#### GENERAL INQUIRY AND RECLAMATION OFFICE.

At the entrance of the office of general direction there is a bureau for general inquiry and reclamation, where information may be asked for by any one, and replies can be given in the German, French, English, and Italian languages. This is furnished with tables and chairs, and one or more intelligent and good-humored persons are stationed there to answer the thousand questions constantly asked by inquisitive and thoughtless persons as well as those from people who really need some information. The office serves also as a place for lodging complaints of any misdemeanor or incivility on the part of the guards or servants of the administration.

In response to urgent requests from many quarters, Professor Hanscheck and Exner have been appointed to furnish visitors with information regarding the various objects exhibited. The former can be consulted every Wednesday afternoon and the latter every Saturday afternoon at their office in the additional exhibition called History of Trades and Inventions.

#### READING AND WRITING ROOM.

In the post and telegraph building, at the right of the chief entrance of the exhibition grounds, two reading-rooms are opened, which can be used for writing letters and for preparing telegraphic messages. At these rooms there are 140 home and foreign newspapers on file. Entrance price, 5 krentzers, equal only to 2½ cents United States currency.

#### BOOK-STORE.

The exhibition book-store is located opposite the jury pavilion. A list of all publications that are placed for sale in this store is published weekly. All newspapers and catalogues can be procured here. Stands for the sale of articles from this book-store are to be found in every part of the exhibition and grounds.

#### SEATS FOR VISITORS.

The general direction provided benches for the free use of visitors to the exhibition and grounds. These were placed at intervals along the covered ways and in shaded places. In addition to these, 12,000 arm-chairs and seats, made of iron and weather-proof, were furnished and distributed all over the grounds and in the covered ways for the use of the public. The charge for an arm-chair was 10 krentzers, and for a seat, 5 krentzers. There were also some fifteen hundred or two thousand chairs placed in semi-circles fronting the orchestra-stand, for the comfort of those desiring to hear the music in the afternoon. The



charge for these chairs was 20 kreutzers. This sum is collected by females, who watch every new-comer, and, as soon as a seat is taken, demand payment. They carry a leathern pouch and a package of small paper checks numbered in sequence. One of these checks is handed to each occupant of a chair when he pays, and serves to show to the controller, who may pass by at any moment, that the money has been paid.

#### ROLLING-CHAIRS.

Five hundred or more rolling-chairs have also been furnished for the use of visitors, and are to be found at all the entrances about the rotunda. The charge for the first hour is one florin fifty kreutzers, and for each following hour one florin; for half a day five florins, and for the whole day ten florins. These chairs are similar to those used in Paris in 1867. They are indispensable to the comfort of some persons, and indeed invalids and feeble persons could not see the exhibition without them. Even strong men become greatly fatigued by a visit to the exhibition. There is not only the physical exertion of walking, and bending over, and of using the eyes, but the mind is actively employed at the same time. After four hours' labor in seeing and noting the peculiarities of objects, the back, limbs, eyes, and the brain are simultaneously exhausted.

The wheeled chairs are used in the grounds as well as in the industry-palace, but they are pushed with great difficulty over the loose gravel. The floor also of the industry-palace is so uneven that the motion to an occupant of the chair must be like that of a coach over a corduroy road.

#### CLOAK-ROOMS AND PARCELS-OFFICE.

It was found desirable to have near each of the principal entrances at the west end, places where visitors could leave their overcoats, umbrellas, or small parcels during the day while at the exhibition. These depots were well patronized, and were a great convenience. A fixed charge of a few kreutzers made them self-sustaining.

#### POST-OFFICE.

A post-office was established within the exhibition for the delivery of letters to persons calling for them—a *poste restante*—in addition to the regular delivery service by carriers, which was extended to all parts of the exhibition. At this office stamps could be purchased and letters mailed to any part of the world. There were also letter-boxes at many different points in the building and grounds. The postal-service there, as well as in Vienna generally, was conducted in a most efficient and satisfactory manner, and merited close attention and investigation.

### X.—THE POLICING OF THE VIENNA EXHIBITION.

The preservation of order and the protection of property at the exhibition-buildings and in the grounds is confided to a mixed service of civil police and of the military. The same regiment of sappers and miners, which has been engaged on the ground from the commencement of the work, has been retained, and now acts as guard and as a reserve-force in case of accident or fire.

The civil branch of the service consists of twelve hundred men detailed from the Vienna city-police, but under separate direction and

control of one chief, Herr Steiskel, and five captains or assistants. The organization is as follows:

Chief of police.  
Five assistants or captains.  
(Five police-stations.  
Six large guard-houses.  
Twelve smaller guard-houses.)  
Eight "inspectors of quarters" for each station.  
Twelve hundred policemen.  
Six hundred sappers and miners,  
(Under separate direction and orders.)  
Twenty detectives in plain clothing.

Two or more men are placed in each transept within sight of each other. They have their assigned beats, and the number of men is determined by the density or number of the objects and the possibility of seeing them all, and by the extent to which the public usually resort to that group or portion of the building. The military and the police work together. They are relieved every two hours.\* At night, after the public have been excluded from the building, the police and guardians, (of which each commission has usually several,) are called together and leave also. The doors are all locked. The inspectors walk through to see that all is safe and then withdraw. The buildings, at least the industry-palace and the machinery-hall, are thus vacated by every person at night, and are watched on the outside at every door and window by the military sentinels and the fire-patrol.

The inspectors of quarters are assigned to the following portions of the building: One in the rotunda; one in the east wing; one in the west wing; one in the art-gallery; one in the machine-hall, and two in the grounds.

Most of the larger exhibitors in the Austrian section, especially those who have any trading interests, keep one or more agents constantly with their objects in the building, who thus serve the purpose of guarding their goods, and at the same time, perhaps, keeping watch of some of the exhibitions made by their neighbors. These persons, also, in part relieve the administration from the necessity of having so large a force of policemen as would otherwise be required. The special exhibitions in the detached buildings, especially those made by large incorporated companies, or the German princes, are protected or watched over by special guardians in the service of the exhibitors. Many of the foreign commissions also employ guardians, whose duty it is to keep the dust off from the exhibits, to give information, and to keep watch over the property.

In the United States section the whole care and direction of the work of guarding and attending to the condition of the section has by arrangement been given over to the general administration. At night no one connected with the commission is allowed to enter. The property is in charge of the imperial commission.

The employment of detectives does not need explanation. It is a lamentable fact that there are those who need watching, and probably the faithful attention to duty by the police-force is promoted by their knowing that they are secretly watched, as well as the visitors.

The provision made for the discovery and extinguishment of fire con-

---

\* This statement has been made to me, but I have doubts as to its correctness.



nects itself with the police service. In case of need the police and fire service of the Prater can be called upon, as well as those of the city itself, to act in conjunction with the specially organized and distinct service of the exhibition.

#### POLICE ARRANGEMENTS AT PARIS, 1867.

In Paris, in 1867, until the 1st of February, 1867, the police service of the exposition was performed entirely by men from the 7th arrondissement (district.) Forty-two men at least were employed each day.

After the 1st of February the number was increased by men selected from the old *sergents de ville*, from different districts. The total number of men in force in the interior of the exposition was 623. To this number should be added 60 guards, charged with the care of the park. This number was placed under the direction of an officer specially designed for the service of the exposition.

Independently of these different services, the prefecture of police furnished during the whole of the exposition 85 *sergents de ville*, to be on guard from 10 o'clock in the morning until 5 o'clock in the evening, on the outskirts of the Champs de Mars, and to have supervision of the carriages and hacks.

In the interior of the palace the same men or agents had always the same place to guard. There were great advantages arising from this arrangement, for these men became acquainted with the different exhibitions and their exhibitors, and consequently could at once observe any displacement of articles not made by the exhibitor. The cases of theft during the whole time of the exposition were very few.

#### XI.—FIRE DEPARTMENT, WATER SERVICE, SANITARY FITTINGS.

##### PROVISION AGAINST FIRE.

Inasmuch as most of the buildings of the exposition are not fire-proof, and contain combustible materials, provision against fire is of extreme importance, and has received the careful attention of the direction.

It has very justly been considered that it is not only essential to provide the means of putting out a fire as quickly as possible, but to establish a thorough guard or watch over the premises, so that the first signs of a fire may be detected and reported without loss of time.\*

The watch or patrol service is performed during the day by the local police and guards stationed throughout the buildings in conjunction with the town police and soldiers of the corps of engineers, and at night by the town police and soldiers only. The duties of the service are carried out, as experience has proved, with the utmost attention and conscientiousness. In addition to the above-named force, there are for the night season sentries in all quarters of the building and grounds. Notwithstanding their immense extent these sentries are visited periodically by patrols of the fire-brigade conducted by officers. The buildings are watched and guarded outside as well as inside, and in fact the service is so complete that it can safely be maintained, as has already several times been proved, that any fire which arises must be discovered and extinguished before it becomes destructive and unmanageable.

---

\* These details concerning the fire-brigade service are from an official source, and have been freely translated for this report.



The fire-brigade is composed exclusively of soldiers of the corps of engineers, of which there are four companies in the exhibition and grounds; consequently it is organized on a military basis. The first working company of this regiment, with a force of eleven officers and one hundred and eleven men, was detailed for this duty. More than one-half of this number served in the city fire-brigade for four months last year, and are skilled firemen; the military commander having selected these men, by consent of the municipal authorities, in exchange for others not familiar with the duties. This body was afterward trained and drilled in the use of fire-engines and the different extinguishing apparatus by one of the captains of the city fire-brigade. Of this body of men there are daily on duty two officers and twenty-five men; in readiness for duty, two officers and twenty men; in reserve, two officers and twenty-five men; altogether six officers and seventy men. The others are used for duty about the barracks, and part are off duty. The men on duty and in readiness are quartered in the two watch-houses between the industry-palace and the art-gallery. The watch-houses are in telegraphic connection with the barracks, as also with all the offices all over the exhibition-grounds with which it is necessary that a rapid means of communication should exist.

The formation of the military fire-brigade was an indisputable necessity, because the total force of the town fire-brigade is only twenty officers and one hundred and eight men, of whom daily in the central ward six officers and thirty-six firemen are on duty, and in the other districts eight officers and forty men, altogether fourteen officers and seventy six firemen, while the remainder are partly off duty and partly on home-duty. It was consequently impossible for the town fire-brigade to undertake the arduous duty required for the exhibition fire-service, so that all that has been done has been to establish a telegraphic connection between the exhibition and the Central and Leopold stadt wards, so as to be able to fall back upon their resources in the case of urgent necessity, which, however, is never likely to happen. It is ordered that any help whatever from the volunteer fire-brigade of the suburbs is to be radically avoided.

Although the military fire-brigade, which is very good and well drilled, does not quite equal the city-brigade as regards practice and reliability, it is nevertheless composed of intelligent and practical people, mostly men engaged in house-building, who, under the direction of trained officers in this branch, will be able to do very good service in case of fire.

Moreover, the fact is not to be overlooked that the number of the exhibition fire-brigade is nearly equal to that of the whole city, and that in the exercise of their duties they will not have so many complex problems to solve, but can set about them in a much quicker and satisfactory manner.

In conclusion, in case of great emergency there could be placed at the disposition of the military commander a force of from two hundred and fifty to three hundred men, well armed and equipped, besides the fire-brigade and safety-service, without weakening any service whatever. For the preservation of public order, such force could be on the site of the fire within ten minutes after the alarm was given, and, if required, could lay aside their equipment and be used for extinguishing the flames.

The fire-apparatus for the military fire-brigade comprises two complete and fully-equipped fire-engines, two large-sized "*hydrophores*," two water wagons, two hose-carriages, each with about 600 linear feet of



hose, tool-carriage, ladders, &c., and all necessary equipments and helmets for the men. Two companies have been formed with this equipment, and by the employment of all the means afforded four powerful streams can thus be brought to bear on the flames.

The most ample precautions have been taken to guarantee a sufficient supply of water under all circumstances. A network of piping underlies and branches out into all parts of the exhibition-grounds. There are ninety-one fire-plugs and one hundred and seventy hydrants. The water flows from elevated reservoirs, which are supplied by one high-pressure and two low-pressure engines from mammoth wells sunk in the gravel, which are practically inexhaustible.

Fifty-seven of the fire-plugs are inside the industrial palace; the other thirty-four are in the art-gallery. By proper use of the fire-plugs every part of the building can be reached by the streams of water. The hydrants are in the courts, between the cross galleries of the industry-palace, and are distributed along the roads and in the gardens over the whole exhibition-grounds. Inside the building the fire-plugs are kept in constant readiness for use, and are fitted with leather hose already screwed on, with nozzle attached, so that in the simplest manner possible they can be put in operation by a single man. The hydrants work in a similar way, but with the exception that a goose-neck has to be first screwed on. All the members of the military fire-brigade have been instructed in the management of these hydrants so as to be familiar with their use.

All fire-plugs and hydrants are put in operation several times during the day, firstly, for the purpose of obtaining the water necessary for sprinkling the floors, and then for watering the gardens and roads. By doing this, the assurance is obtained of their being constantly in good working-order, and an opportunity is afforded for remedying without delay anything interfering with their functions.

In addition to all these the bodies of water contained in eleven large fountain-basins, and also the water of the Henstadt, can be brought into use if required, together with that of nine large wells, sunk six feet below the mean-level of the Danube River, and walled up, from which source alone, with the help of the hose to be found in all quarters of the exhibition and grounds, all the objects within the exhibition domain can be reached, and thus, under the most unfavorable circumstances, there is no cause whatever, in the opinion of the direction, to fear any insufficiency of water.

The telegraph-service, in as far as it is connected with the military bureau, is worked day and night in three stations in the exhibition, by men specially appointed for this duty from the military force. The signals employed are bell-signals which are situated at the east end, west portal of the industry-palace, and both portals of the machine hall, and, worked by a system of wire and iron triangles, convey the intelligence of the outbreak of a fire to the fire and safety watchmen; then there are horn signals, which, as well as the telegraph, are used for giving the alarm at the barracks; and, lastly, whistles, which are used by the safety-watch for communication with the military.

There have already been at least four cases of fire in the industry-palace and the machinery-hall. In two cases which came to my knowledge the fire originated among the papers, straw, and litter of a mass of packing-cases recently emptied, and was caused, probably, by some smoker, who either lighted a pipe or cigar, or dropped matches upon the floor.

In all of these instances the fire was quickly extinguished. But not-



withstanding all of the precautions taken, I cannot but feel that there is very great danger of a destructive conflagration among those buildings.

The experience of our Crystal Palace in New York is still fresh in the minds of many, and it is well known that the open floor gave the greatest possible opportunity for the rapid spread of the flames when the wood was once ignited. The fate of the Alexandra Palace is another warning, and it is our duty to secure, as far as practicable, fire-proof structures for our purposes in 1876.

In the Paris exposition of 1867 there were four or five incipient conflagrations, but all were arrested in good season, and were hardly known to the public.

#### THE WATER-SERVICE.

Water can be obtained almost anywhere upon the Prater by digging from 6 to 12 feet. The formation is alluvial, and is raised but little above the level of the water in the Danube. Beneath the soil is a continuous substratum of clean water-rolled gravel, which permits the free percolation of water from the river.

This formation is also just what is best adapted to the successful operation of the American tubular well, and many such wells or tubes have been driven for water in all parts of the grounds. This, it will at once be seen, is a great advantage, for at whatever place a supply of water is required, all that is necessary is to drive down a pipe to the water-level and then attach a pump to the top. There is also another great advantage. The water-bearing gravel will receive an almost unlimited amount of surface-water. The cost of sewerage is thereby lessened. In many places no sewers are required. Pits sunk in the gravel are sufficient. Water, as, for example, the drainage from the rotunda roof, soaks rapidly away, and finds its level in the general subterranean reservoir. The sewerage thus contaminates the water; there is but one receptacle, but the immensity of the supply doubtless dilutes the evil, and it is not noticeable upon the Prater. In the city, however, it is different; the well and cistern-water is notoriously unwholesome.

Yet notwithstanding this fact, it was a long time after the subject of supplying the city with water had been agitated that it was decided to bring water from a distance in aqueducts in preference to pumping it directly from the ground. But the latter system is still in use, and the absence of aqueduct-water necessitated the use of wells at the Prater.

The water-works were planned and carried into execution by the engineers Grimberg and Hauber. The capacity of the water-works is more than half a million of cubic inches to . The works consist of a well of the kind described, 18 feet by 22 feet deep, from which water is pumped by a 50-horse-power engine, and is forced to the reservoir on the top of the water-tower. This water-tower is erected near the west end of the grounds between the industry-palace and the machine-hall. It is 138 feet high. The foundations are of stone and the frame of iron. Light cast-iron pillars securely braced and 105 feet high support the reservoir. Two of these pillars serve as conduits for water, and the water is pumped up to the reservoir through a third or central pipe. The iron reservoir, 20 feet high and 24 feet in diameter, has a capacity of 8,000 cubic feet of water. This circular reservoir is



surrounded by a gallery and is accessible by means of a winding iron staircase between the columns.

From this elevated reservoir the water is distributed in pipes over the whole of the industry-palace and the intermediate buildings. There are one hundred fire-plugs, one hundred and eighty-six hydrants, and nine fountains, besides the water-engine of the *New Freie Presse*. This reservoir with the pumps is capable of supplying from 16,000 to 18,000 cubic feet per hour.

There is another water-pumping establishment erected near the jury-pavilion which is tributary to the first system and supplies the two circular water-fountains, in front of the industry-palace. These fountains require 6,000 cubic feet of water hourly.

There is for this service a machine-house, with two steam-pumps each of 50-horse-power, made on the American pattern. These pumps draw the water from a well 12 feet by 20 feet, and force it directly into the pipes leading to the great fountains.

There is a third establishment in the east end of the machinery-hall where water is drawn from tubes or wells and is forced by steam-pumps into a reservoir 18 feet above the floor of the machinery-hall. This reservoir serves to supply the boilers and condensers. The entire net-work of pipes connected with the water-service is more than two and one-half miles long.

#### DRAINAGE AND SANITARY FITTINGS.

For a general and detailed description of the drainage and sanitary fittings, I cannot do better than to present entire the comprehensive and carefully prepared report which was published in "*Engineering*" November 28, 1873, a copy of which follows:

One of the most important of the many arrangements which received the attention of his excellency Baron Schwarz-Senborn, the general director of the exhibition, for the accommodation of its host of visitors, and for its preservation from insanitary influences, was the establishment of a number of retiring-rooms in the industrial palace, and in the open grounds, and also of a system of drains for removing the sewage therefrom, as well as from the restaurations, pavilions, and other buildings—the well-arranged and abundant water-supply laid down at all parts affording facility for the perfect working of the fittings and drains. Early, therefore, in 1872, his excellency contracted with Mr. George Jennings for providing and fixing his patent water-closets, lavatories, and urinals in the several retiring-rooms, and for laying the system of drains; and Mr. John Phillips was dispatched to Vienna, as engineer, to arrange and execute the works, under the direction of Professor Ritter von Grimburg, the chief of the mechanical engineering section of the exhibition.

It was intended at first to use the New Danube Regulation Canal at the back of the exhibition for the drainage outlet. But, owing to the absence of a stream therein at the time, the work being then incomplete, it was deemed prudent not to do so, but to use the Danube Canal instead. This is a swift stream, a branch of the Danube itself, running eastward at the boundary of the Prater, three-quarters of a mile from the south front of the exhibition. When the locations of the several buildings and retiring-rooms and the exact position of the drainage outlet were determined, plans and sections of the system of drains, showing their courses, inclinations, depths, and sizes, were prepared by Mr. Phillips, and, these being approved by Professor Grimburg, the works in accordance therewith were commenced.

By reference to a record of the levels of the Danube Canal for a number of years, it appeared that it was subject to a rise and fall of about 12 feet, its highest level having been nearly 9 feet 6 inches above, and its lowest 2 feet 6 inches below, the city datum. It also appeared that the palace floor was 16 feet 6 inches, and the ground along its front and back 12 feet, above this datum. Consequently the floor was 7 feet, and the ground only 2 feet 6 inches, above the highest flood level in the canal. From this it was evident that, to lay the drains at sufficient depth to carry off the sewage from the retiring-rooms, pavilions, restaurations, and other buildings, and with sufficient fall for it to flow without depositing, they would be subject to long periods of flooding, and that, as no head or pressure of water could be gained to produce an outward current,



so as to force the sewage through the water lying in the drains, they would soon choke up.

In order, therefore, to give the drains ample depth and fall, to prevent them from being flooded, and to produce a constant flow of the sewage along them, and a discharge of it at the outlet, it was determined, after mature consideration, to place the main drain at the outlet one-fourth of the rise of the stream above its lowest level, namely, 6 inches above the city datum, or 9 feet below the highest flood level, and 11 feet 6 inches below the ground in front of the palace, to fix a valve on the outlet, and to pump up the sewage when the stream in the canal was above the outlet.

The arrangement by which this plan was carried out was as follows: At a short distance back from the canal, and in the line of the main drain, two 10-foot cylinder reservoirs of wood staves, 20 feet in length, were sunk 6 feet below the level of the main drain, one for receiving, and the other for discharging, the sewage. A 15-inch pipe was fixed between them, opposite to, and level with, the drain, with a valve hung on its outlet end in the discharging reservoir, and a 15-inch pipe was laid from this reservoir into the canal, with its outlet carried 2 feet under the lowest water level therein. When, therefore, the stream in the canal was above the main drain emptying into the receiving reservoir, its pressure closed the valve in the discharging reservoir, and, by means of a 10-horse-power steam-engine and a 6-inch centrifugal pump, the sewage was lifted from the former into the latter, whence it flowed by its own gravity through the pipe into the canal; and when the stream therein was below the drain in the receiving reservoir, the valve was opened, and the sewage passed direct through both reservoirs into the canal.

In determining the sizes of the main drains, two material points presented themselves for consideration. The first was to reduce the cost of the drains, and also that of pumping up the sewage, as much as possible. The second was to give the drains such gradients and sizes that, while the sewage streams should have sufficient velocity to prevent the matters in suspension from depositing, they should fill the drains, and so prevent the sewage itself from emitting offensive gases. The first was accomplished by excluding from them the rainfall from the roofs and surface, the water in the subsoil, and the waste and condensing water from the steam and other engines in the Machinery Hall, the whole of which water, if it had been admitted into them, would have increased their capacities threefold, and correspondingly increased their cost, as well as that of pumping. The second was accomplished by giving the drains such gradients that the sewage was discharged with the velocity of about 80 ft. per minute, that velocity having been found by the engineer to produce sufficient energy in highly diluted sewage from closets to prevent it from depositing, and providing such capacities that they were nearly always running full.

With regard to the water from the roofs, surfaces, and engines, which was comparatively clean, separate provision was made for discharging it by small pipe-drains, which were laid from the rain-pipes, the gullies and the engines, into dry brick wells sunk through the subsoil into a stratum beneath, which, as it consisted of large shingle and small bowlders, readily received and dispersed it. This stratum was, moreover, in free communication with the beds of the Danube and Danube Canal, and therefore was always charged with water from these streams; in fact, it formed an underground lake which was practically inexhaustible. It was from this source that the water was obtained for the steam and other engines in the Machinery Hall and elsewhere; for charging the fire-mains; for the fountains; for watering the roads, avenues, walks, floors, lawns, and plants; for the offices, restaurations, and pavilions; for the retiring-rooms; and for flushing the drains.

Before describing the drains as laid down, it may be observed that owing to the extremely loose nature of the subsoil, which consisted of sand, gravel, and beds of small shingle, like peas and beans, it was necessary to use great precautions in excavating and strutting the trenches for the drains, so as to prevent the sides from falling in and burying the workmen. Hence, in order to avoid this the engineer was compelled to send to England for a number of men skilled in this kind of work, whom he distributed among the native workpeople. These latter consisted of Austrian, Hungarian, Bohemian, Slavonian, and Italian men and women, who were employed for more than six months—the men in digging and aiding to strut the trenches, and lay the pipes, and the women in filling in and ramming the ground as the pipes were laid. The following was the system of drains as laid down.

From the pumping station near the Danube Canal a main 15-inch drain was laid northward across the Prater, and along the Central or Kaiser Allee, to near the south front of the palace for a length of 4,000 feet, and with a fall of 1 in 1,000. Into this drain a 6-inch drain was laid from the retiring-rooms near the post-office, the length being 600 feet, and the fall 1 in 300.

At the upper end of the 15-inch drain a curved double junction was formed of brick-work in Portland cement. From this junction two 12-inch drains were laid—one eastward and the other westward—along the Elizabeth avenue, parallel with the palace, the length of each drain being 1,250 feet, and the fall 1 in 800. Into these drains 6-inch



drains were laid from the Kaiser pavilion, the jury pavilion, the two retiring-rooms in the palace, east and west of the chief central entrance, the two retiring-rooms in front of the palace towards its east and west ends, and the Russian, French, Italian, Swiss, and Liesinger restaurations.

At the upper ends of the 12-inch drains curved junctions were also formed of brick-work in cement. From the eastern junction a 9-inch drain was continued in that direction for a length of 650 feet, and with a fall 1 in 400. Into this drain 6-inch drains were laid from the police station, the Egyptian, Turkish, and Persian pavilions, and the Turkish restauration and coffee divans near the southeast end of the palace. Also from the western junction a 9-inch drain was laid in that direction for a length of 400 feet, and with a fall of 1 in 400. Into this drain 6-inch drains were laid from the Hungarian, the Pilsner Actien, the Pilsen Bürgerlich, and the American restaurations, near the southwest end of the palace.

The foregoing drains completed the sewage drainage of the several buildings along the south front of the palace. It would be impossible for drains to be subject to a greater ordeal to keep them free from deposit and clear than these were, especially the western 12-inch and 9-inch branch, and its 6-inch tributaries. At the Liesinger, the Hungarian, the Pilsner Actien, and the Pilsen Bürgerlich restaurations tens of thousands of persons dined daily from the opening to the closing of the exhibition. Sometimes as many as ten thousand persons dined, and twenty-two thousand five hundred seidel glasses of beer were drank per day at the Pilsner Actien alone; and proportionate numbers of persons dined, and glasses of beer were drank, at the other restaurations named, except the Hungarian, where the staple drink was wine from Hungary. Hence the quantity of sewage that came from these places, particularly washings, refuse, and fat from the kitchens, was enormous. In the drains from the kitchens special traps were provided by the engineer for intercepting the refuse and fat. But so great and continuous was the cry from the crowds of diners for "kellner, speisen, and bier," that no one had time to attend to them, or, indeed, to anything but the demands on the kitchen and the beer-barrel. Now and again one or the other of the tributary drains would stop up, and then came a dead-lock at the closets and the sinks, and a request from the restauration proprietor for the immediate attendance of the "ober ingenieur." Upon opening the drains they were invariably found to be stopped by a pair of trousers, a pair of stockings and a newspaper, some table napkins, some dish-cloths and brushes, some large pieces of meat and bones, or some broken beer-glasses, which had been forced through the closets and sinks; and bushels of fat were taken out of the drains, as well as out of the reservoirs at the outlet.

From the junctions at the upper end of the 12-inch drains, already mentioned, two 9-inch drains were continued northward across the palace, one to its northeast end and the other to its northwest end, the length of each being about 1,100 feet, and the fall 1 in 600, and into these drains 6-inch drains were laid from the retiring-rooms in the palace at those places. From the 9-inch drain, at the northwest end, the same size drain was continued thence northward past the west end of the Machinery Hall, and along the back thereof for a length of 1,300 feet, and with a fall of 1 in 500. Into this drain 6-inch drains were laid from the British commissioner's pavilion, the police-station, the Vienna bakery, the English restauration, the retiring-rooms at the east end of the British Agricultural Hall, the three retiring-rooms at the back of the west half of the Machinery Hall, the British workmen's houses and laundry, and the Vienna buffet. Also from the 9-inch drain at the northeast end of the palace the same sized drain was continued westward along the back of the palace for a length of 600 feet, and with a gradient of 1 in 600. Into this drain 6-inch drains were laid from the police-station, the Silberegg restauration, and the retiring-rooms at the back of the Schwarzenberg Pavilion.

The foregoing were the whole of the drains which discharged the sewage produced in the exhibition into the Danube Canal. Their sizes and lengths were as follows: 15 inch, 4,000 feet; 12 inch, 2,500 feet; 9 inch, 5,500 feet; 6 inch, 5 inch, and 4 inch together, 13,000 feet; making a total length of 25,000 feet.

Brick shafts, 2 feet 6 inches square, and from 100 to 200 yards apart, were carried up from the main drains, at the junctions and other convenient places, to the surface, for examining, ventilating, and flushing them. The ventilation was effected through perforations in the shaft-covers at the surface. No other provision was found to be necessary, for, owing to the almost perfect clearance of the drains daily by the copious and continuous flow from the retiring-rooms, the restaurations, and other buildings, which nearly and sometimes entirely filled them, deposit and decomposition were avoided, little or no effluvium was engendered, and consequently no smell was ever perceptible from them. Occasionally strong flushes of water were sent through them from hose put down the shafts from hydrants near at hand on the water mains. The total length of the main drain and the western branch was 7,650 feet, and the total fall 10 feet. Floating substances, which were discharged down the closets at the head of this drain, passed through into the reservoir at the outlet in 1 hour and 36 minutes, equal to a velocity of 80 feet per minute nearly.



Before dismissing this part of this article, it may be remarked that, owing to the extremely flat gradients that could be given to the main drains, it was necessary, for their efficient working, that the pipes should be laid accurately to the gradients, and that the joints should be made perfectly water-tight. With the short, or 2-foot stoneware drain-pipes, and the much larger space in the socket ends than the size of the butt ends, as now manufactured, strict conformity to the requirements referred to was most difficult to attain. This gave the engineer great anxiety and trouble, as the success of the work mainly depended upon it. He therefore, from a spirit-level on the surface, put in the exact gradient of each drain at every 10 feet or 12 feet, and had, as far as was practicable, the joint of each pipe filled full all round with Portland cement, and pointed, and the inside frill of cement removed and drawn out as each pipe was laid. By this means an unchecked flow of the sewage streams was insured and maintained, and very little of the liquid was lost by leakage.

Engineers experienced in sewerage works know that, as the 2-foot stoneware pipes, as usually made, necessarily produce a multiplicity of joints, and the large and irregular space in the sockets causes a drop at the bottom and top of the joints, checking the flow of the stream, reducing the bore of the drain, and preventing the joints from being made water-tight without a deal of trouble; no drain can be laid so even and uniformly cylindrical, and so water-tight at the joints as it should be. What really is required is that the pipes should be in lengths of 3 feet and 4 feet—they are so made in Germany and Austria—which would reduce the number of joints one-third and one-half, and that the socket and butt ends should be formed so that when they are put together a part, all round, should fit as accurately as a ground stopper in a bottle. The bore of the drain would then be regular and concentric, and the joints air and water-tight. In Belgium a stout India-rubber ring is slipped into a slightly fluted groove formed near the butt end of each pipe. When the pipes are laid the projecting rings press tightly against the sockets, sealing the joints and insuring the concentricity of the drain.

It may also be remarked that had the main drains been made much larger than they were, or large enough to discharge the rainfall and engine-water as well as the sewage, the gradients and quantity of sewage remaining the same, the streams would have been so spread, lowered, and weakened, and so exposed to the action of air in the drains, that doubtless deposit would have ensued and offensive gases emitted; and, then, to absorb or carry off the gases, trays of charcoal must have been placed in the shafts, or ventilating-pipes continued upward from them into a higher stratum of the atmosphere. It was demonstrated in the case of this drainage, as it often has been in similar cases, that the nearer the capacities of sewers are made to the quantities of sewage to be discharged by them, taking care to give the streams, by the inclinations and contracted form of the sewers, sufficient velocity to prevent deposit, the less will be the emanation of gases from the sewage, the freer will be the sewers from such gases, the less will they act as retorts to convey, by the house-drains, typhoid or other zymotic disease-germs amidst the living, and the sweeter will be the air within and surrounding the houses in connection with them.

There were twenty-four sets of retiring-rooms, twelve for ladies and twelve for gentlemen. Six were in the palace, two in the building near the post-office, and eighteen in specially-constructed pavilions in the open grounds. Each set of rooms for ladies consisted of a reception, a lavatory, and a closet-room; and each set of gentlemen's of a reception, a urinal, a lavatory, and a closet-room. The rooms were approached in the order named, and were large, lofty, well lighted, and well ventilated at both ends.

The lavatory-basins were "Jennings's patent tip-up," fixed mostly in pairs, and some in threes in a semi-circle, with polished-marble and enameled-slate tops and back-skirtings carried on ornamental wood-cased stands. In each ladies' lavatory-room in the palace there were four pairs of these basins, and in each gentlemen's room three pairs and a range of five. There was also a separate tip-up pillar-lavatory in these rooms. In each ladies', as well as gentlemen's, lavatory-room in the open grounds there were two pairs, vis-à-vis.

The water-closets were "Jennings's patent closets," provided with polished mahogany seats. There were ranges of ten and six of these, vis-à-vis, in each ladies' closet-room in the palace; and ranges of six and two, vis-à-vis, in each gentlemen's room. There was also a range of seven in each ladies' closet-room in the open grounds, and a range of four in each gentleman's room. Fluted matched boarded partitions, 7 feet high, divided the closets from each other.

The urinals were "Jennings's patent three-person and six-person," with central basin of galvanized iron, partitions of enameled slate, and iron foot gratings. Four "three-person" were fixed in each of the three urinal-rooms in the palace, and two "three-person" and one "six-person" in each of the nine urinal-rooms in the open grounds.

In the Kaiser pavilion there were four separate closets, three being of superior quality, and three tip-up pillar lavatories; and in the jury pavilion a range of three closets, two tip-up pillar lavatories, and six white flat-back urinals. The British com-



missioners' pavilion was provided with two separate closets and three lavatories, one closet and one lavatory being specially fitted up in connection with the Prince of Wales' apartments. In the Khedive of Egypt's pavilion there were three closets, one of which, of special construction, was attached to the Khedive's suite of rooms. These closets, with *seats*, were quite a novelty to the Egyptians. They do not *sit* but *stand* on a broad stone step raised 4 inches above the floor, with a hole 14 inches in diameter near the back of the step, and a narrow slit, 4 inches wide, coming from the hole toward the front. In the several restaurations, before mentioned, there were ranges of closets for ladies, and ranges of closets and urinals for gentlemen. At the back of the machinery-hall two sets of free latrines were provided for the male and female workpeople engaged in the machinery-hall and in the open grounds; and fourteen "six-person" urinals were distributed about the grounds for the accommodation of the visitors.

Under the floors of the retiring-rooms in the palace, and in the open grounds, drains were laid from the lavatories, closets, and urinals, into general siphon-traps formed just outside the buildings; from the traps 6-inch drains conveyed the sewage into the main drains; and from over the outlets of the traps pipes were carried above the tops of the buildings for ventilating the drains between the traps and the main drains. The workpeople's latrines were also drained into the main drains, as were several of the "six-person" urinals in the grounds.

To all the lavatories, closets, and urinals in each set of retiring-rooms, there was an ample supply of water. This was taken to the fittings by branch pipes from a horizontal pipe laid behind the ranges of closets, and carried up the angles of the room to two small cisterns placed apart in the roof, the cisterns being supplied from the main by a pipe and ball-cocks in the usual way. By this arrangement the pressure from the main, which was equal to four atmospheres, was broken, and a moderated pressure, and an equalized supply were obtained at all the lavatories, closets and urinals. As the supply in the main was constant, immediately there was a draught at a lavatory or a closet, the water in the cisterns sunk, the ball-cocks opened, and the same quantity that was drawn off flowed into the cisterns. Even when there was a simultaneous draught at two or three lavatories or closets, the quantity and pressure in the pipes descending from the cisterns always gave the required supply and flush in the lavatory and closet basins. Water was also supplied, on the same principle, to the closets, urinals, and lavatories in the restaurations and pavilions, and it was laid on to the workpeople's latrines and the urinals in the grounds.

The total number of lavatories fixed in the retiring-rooms, pavilions, and restaurations, was 150, of closets 260, and of urinals 240. When the whole of the drains and sanitary fittings were completed, they were thoroughly tested, and found to perform their functions most satisfactorily; and they continued so to act during the course of the exhibition, under the management of Mr. Phillips, as engineer for the general direction, who has been presented with a special testimonial by his excellency Baron Schwarz-Senborn, "for the distinguished services he had rendered in arranging and successfully executing the works." Professor Grimburg and his staff of engineers also rendered most earnest and able assistance in carrying out this important work.

The retiring-rooms were conceded during the exhibition to Mr. Páisens, of Vienna, whose charges were, in the palace, for a lavatory or a closet 20 krentzers, equal to 10 cents; and for a urinal 10 krentzers, equal to 5 cents; and in the rooms in the open grounds half the above. There were two female attendants in each set of rooms, one to take the money and issue tickets, the other to receive the tickets, wait on the visitors, and keep the fittings in order.

## XII.—PRINTING AND PUBLISHING IN CONNECTION WITH THE EXHIBITION.

The printing-press is the right arm of great exhibitions. Extreme publicity is one of the first conditions of their success. Comparatively few see the exhibitions, but the mass of civilized populations participate in their advantages, and draw both pleasure and instruction from them through the medium of the press.

Probably no one of the series of international displays has been more generally heralded than this of Vienna. Among the many great facilities accorded by the government in the inception of the work, was the privilege of using the Imperial printing-office, one of the finest in the world. Practically, the use was gratuitous, though the actual cost of paper and press-work was charged to the exhibition. This, as has been shown under the financial head, was merely transferring the outlay from one branch of the government to another.



## THE OFFICIAL PROGRAMMES.

The programmes were prepared at an early date, and were published in four languages, German, English, French, and Italian. They were liberally circulated, not only in Austria, but in other countries, and they were designed to afford all the essential details of information to the home and foreign commissions, and to the public generally. They were freely distributed in the United States to our public men through the mail, and by the Austrian representatives and special agents. Some of them were reprinted by the United States State Department, and were liberally spread over the country through the mails, and from the office of the Vienna commission. They were also reprinted by other countries, and were freely circulated.

The official programmes have from the first been printed in uniform style as respects size, paper, and typography; and they are consecutively numbered in large Arabic numerals, from 1 onward. No. 91 appeared on the 23d of June. A good quality of printing-paper is used, it being cheaper, lighter, and easier to print on than heavy sized or writing paper. The size of the sheet is the full quarto; the printed page 8 by 5 $\frac{7}{8}$ . An octavo page would be much more convenient for use and reference when bound, and I think should be adopted by the commission.

These programmes, as far as their terms have been adhered to, serve as a history of the successive stages of the exhibition. They form an interesting and instructive series, and the instances of want of conformity to them are equally instructive when explained.

List of the official reports upon the Vienna exhibition, published up to the 30th of November, 1873. These were edited by Dr. Carl T. Richter; were printed in the Imperial State printing-office, and were on sale by all booksellers at from 20 to 90 kreutzers each, according to the size:

		<i>Fl.</i>	<i>Kr.</i>
Heft	1. Der Pavillon des kleinen Kindes, von Dr. Ferdinand Stamm .....	0	30
	2. Zucker, Apparate und Einrichtungsgegenstände für Zuckerfabriken, von Dr. Josef Hanamann .....	0	40
	3. Die Arzneiwaaren, von K. D. Ritter v. Schroff .....	0	50
	4. Die Fettwaaren und Producte der trockenen Destillation, von Dr. Heinrich Schwarz .....	0	35
	5. Wein-, Obst- und Gemüsebau, von H. Goethe .....	0	20
	6. Seide und Seidenwaaren, von Anton Harpke. Posamentirarbeiten, von Carl Giani .....	0	20
	7. Die Stiekerei und die Spitzen, von Dr. Ferdinand Stamm. Die Frauenarbeiten, von Frau Helene Freiin von Roditzky .....	0	30
	8. Musikalische Lehrmittel und das musikalische Erziehungs- und Bildungswesen, von Professor Weinwurm .....	0	40
	9. Transportmittel und anderes Betriebsmaterial für Eisenbahnen, von Emil Tilp .....	0	40
	10. Die Spinnereimaschinen, von Johann Zemann. Die Nähmaschinen, Strick- und Stickmaschinen, von C. Kohn .....	0	40
	11. Zuckerbäckerei, Conditen und Chocolate, von A. Gerstner. Tabak und Tabakfabricate, von Franz Riedl .....	0	20
	12. Die Leistungen der Statistik, von J. Löwenthal .....	0	60
	13. Baumwolle und Baumwollwaaren, von Dr. Alexander Peez. Die Wirkwaaren, von Ludwig Glogau .....	0	40
	14. Persien, von J. E. Polak .....	0	60
	15. Rumänien, von Baron Ernst Haan .....	0	20
	16. Bergbau und Hüttenwesen, von Dr. Franz von Vivenot .....	0	30
	17. Geographische Bildungs- und Unterrichtsmittel, von Anton Steinhäuser .....	0	36
	18. Heeresbekleidungs- und Ausrüstungswesen, von C. Mayer. Das Heeres-Verpflegungswesen, von Alex. Poppovici .....	0	30
	19. Kirchliche Kunst, von Hans Petschnig .....	0	30



	<i>Fl.</i>	<i>Kr.</i>
20. Fertige Kleider, von Ig. Ortmann, Ant. Kreuzig, Josef Migotti, Wilh. Pless, Fr. und Max Stiasny.....	0	36
21. Leder, von S. Goldschmidt. Rauh- und Kürschnerwaaren, von J. Max Hirsch.....	0	50
22. Beiträge zur Geschichte der Preise, von Dr. C. Theodor v. Inama Sternegg.....	0	60
23. Conserven, Extracte und Fleischwaaren, von Carl Warhanek.....	0	20
24. Die Thonwaaren-Industrie, von Dr. Emil Teirich.....	1	--
25. Der Unterricht in der Geschichte, von Dr. Emanuel Hannak.....	0	40
26. Der Blinden- und Taubstummen-Unterricht, von Eduard Kaltner ...	0	30
27. Der Schreibunterricht, von J. Hüpscher.....	0	30
28. Der Welthandel, von Dr. Carl Thomas Richter.....	1	--
29. Leder, von S. Goldschmidt.....	0	30
30. Das Hüttenwesen, von Franz Kupelwieser.....	1	20
31. Chirurg. Instrumente, von Dr. Mosetig v. Moorhof, Dr. Hans Adler, Dr. L. Schrötter, Dr. M. Benedikt.....	0	50
32. Türkei, von Carl Sax.....	0	60
33. Kupfer- und Stahlstichdruck, von Louis Jacobi. Lithographie und Chromographie, von Conrad Grefe.....	0	30
34. Die Zündwaaren und Explosivstoffe, von Dr. Wilhelm Friedrich Gintl.	0	40
35. Militär-Kartographie, von Josef Zaffauk.....	0	40
36. Der Zeichnen- und Kunstunterricht, von J. Langl.....	0	90
37. Mehl, Mehlfabricate und die Maschinen und Apparate der Müllerei und Bäckerei, von Fried. Kick. (Mit 2 lithog. Tfl.).....	0	40
38. Papier-Industrie, von Emil Twerdy.....	0	40
39. Musikalische Instrumente, von Dr. Eduard Schelle.....	0	96
40. Wein, von Franz Leibenfrost.....	0	20

## No. 247.—WELTAUSSTELLUNGS-CORRESPONDENZ.

42 PRATERSTRASSE II,  
FRIDAY, April 18, 1873. VIENNA.

*Weltausstellung*, 1873.

[Here follow the items relating to the exhibition for publication.]

## EXHIBITION CORRESPONDENCE.

There has been since August 7, 1871, a system of general announcement to the officials of the exhibition and to the newspaper press by means of lithographic notes or slips giving briefly such current information regarding the work of the exhibition, and of the executive offices, as the general direction thought would promote the success of the enterprise, and gratify the curiosity of the public. The idea of lithographing such announcements appears to have been formed in order to be able to give quickly the information in a concise and correct form at the same time to each of the journals, so that there should not be any ground of complaint of favoritism by any of the representatives of the press, and so, also, that no mistakes in reporting could occur through verbal misunderstandings.

These lithographs have the appearance of autograph notes. They are headed "Weltausstellungs-Corresspondenz," and are dated and numbered. The last issue (at the time of writing) June 23, 1873, is No. 270. Each item is separately numbered. It is, in short, the medium of communication between the direction and the newspaper press; and most of the papers either print the notices entire, or give the substance of them. The general orders are issued in the same way. The system is cheap, rapid, and effective, and a similar one would doubtless be useful to our commission.

## OFFICIAL CATALOGUE.

Provision was made in advance, as is usual, for the compilation and issue of a general catalogue of the whole exhibition.

The conditions were made known in programme No. . These conditions were, that all the necessary particulars should be furnished in the German language to the general direction not later than the 15th of February, 1873. If this regulation had been faithfully complied with by all of the participating nations it is probable that a general official catalogue would have appeared in good season and would have been of very great service to all concerned, of whatever nationality. But the requisite information was not given in time, and in some cases (and notably that of the United States) not at all. Consequently, the catalogue could not be satisfactorily compiled, and it was necessarily very imperfect and incomplete. It is a pity perhaps that it appeared at all, for it is comparatively useless and is a hinderance to better work. An edition of ten or twenty thousand was struck off rapidly and issued to the public directly after the opening, May 1, a copy being placed in the hands of the Emperor at the opening ceremony.

I have conflicting statements regarding the sale of the edition and the appearance of a second and better one. Some say that the entire edition is sold; some say that it cannot be sold; some say that a second edition of 100,000 copies will appear shortly; others, that it is uncertain, that it will be kept back until the first edition is sold, &c.\* Meantime nearly all the principal nations have published special catalogues of their particular portion of the exhibition. If this action had not been taken, the exhibition might be regarded as without any catalogue worthy of the name, although so much money has been expended on one. In respect of a catalogue, the contrast with the conditions at Paris in 1867 is great. There, the official catalogue was of great service from the first. It not only appeared in French, but was also issued under contract with J. M. Johnson & Sons, in London, in English. It appeared in two or more parts, and it was enriched with most valuable industrial statistics and general information, especially in regard to France. These statistical statements were prepared by the committees of admission in France for the various classes, and they gave in each case a clear *aperçu* of the condition in France of the art or industry of that class. Here, though one of the features of the plan of the exhibition was to obtain statistics of each industry, no such statistics appear, at least not in the Austrian portion, where they were most expected. But we are saved from utter disappointment in this regard by the action of some of the nations in printing the special catalogues of their portion of the exhibition. Prussia and Belgium may be specially mentioned as having performed their duty in this respect. From the United States there is nothing, not a page of general statistical information, though the results of our decennial census have recently appeared, and could have been briefly stated in our special catalogue, greatly to the gratification of Europeans and to the advantage of our country. In most cases a second edition of the special catalogues has been required, owing to the imperfections of the first, and to supply the demand for them.

The British catalogue is one of the most neatly printed and carefully compiled of all, and it is illustrated by maps and drawings of the exhibition buildings and grounds. It is also enriched by statistical and descriptive notices of the colonies of Great Britain. It is sold at the low price of one florin; just sufficient to cover its cost. The advertising patronage assists greatly in paying the expenses.

The catalogue of the American department was originally printed in

---

\* P. S., July 26.—The second edition appeared day before yesterday.



New York, before the opening of the exhibition. It is the result of a concession granted by the commission and is issued free of cost to the country. The publisher hopes to get his return for the time and outlay by the sale of copies at a low price. The first edition was made up from copies of the permits granted and not from the exhibition as made here. A second edition, revised, augmented, and corrected, has just appeared. It has been printed in London in the same style and form as the British catalogue, and, through the courtesy of the British commission, contains copies of the same illustrations. It is a pity that this edition, like the first, is without statistical information of value. The influence of the exhibition on civilization and advancement generally is much curtailed by neglecting to give statistical and other information in the catalogues. Thousands of persons connected with the press attend such exhibitions for the purpose of getting information to publish at their homes in the journals and reports. They have no time to waste in the fruitless effort to gain such facts and figures as perhaps can only be had in the various countries. Unless statistical information is carefully obtained in advance and is presented in the first editions of the catalogues, the opportunity is lost and cannot be retrieved.

The Russian special catalogue is well prepared, in the French language, and is enriched by notes. In 1867 the Russian government printed two costly volumes on the resources of the empire, for distribution to foreign commissioners and scientists; but the government has not undertaken so much for this exhibition. The Prussian and Belgian catalogues are also full of valuable information and are much sought for by the public. The first editions are exhausted. Portugal is not behind in the good work, and has issued a volume especially for this occasion, together with several brochures. New volumes appear from day to day, and it is probable that before the exhibition closes nearly every country which participates in the exhibition will have contributed to the series. This notice is sufficient to show what a great amount of money and labor is expended upon catalogues, and to suggest that if this effort could be systematized and directed a much more satisfactory result could be attained.

#### HISTORY OF AUSTRIAN INDUSTRIES.

Although the Austrian catalogue is so deficient in annotation and general information, the deficiency is supplied, perhaps, if not to the general public, at least to specialists, by a valuable work, under the auspices of the government, giving a concise history of the rise and progress of the trades, industries, and inventions of Austria for one hundred years past.\* It consists of a series of articles prepared by competent experts, elegantly printed and combined in a series of volumes of which the first two only have yet appeared. The whole work is under the editorial care of Professor Dr. William F. Exner. The first volume contains essays on the production and manufacture of raw materials, &c., such subjects as mining and smelting, agriculture and forestry, chemical industry, flour, bread, food and drinks, textiles, metals, wood, porcelain and glass, fancy wares, paper, bronzes, &c. The second part treats of machines, transportation, scientific instruments, music, civil-engineering, education, cartography, &c.

I have given these details in order the more fully to direct attention

---

\* Beiträge zur Geschichte der Gewerbe und Erfindungen, Oösterreichs von der Mitte, des xviii Jahrhunderts bis zur Gegenwart. Exner. Wien, 1873. Wilhelm Braumüller.



to a great duty which lies before the commission and the people of the United States in regard to similar historical notices of the development of industries in the country during the first one hundred years of our separate existence as a nation. The Hon. John Bigelow was the first, I believe, to direct public attention to this subject, in his suggestion that a series of memoirs should be written.

It is very probable that such an undertaking was suggested to him by the action of the French government, before the universal exposition of 1867, instituting a series of reports upon the progress of letters and science in France.\* These reports were written by the ablest men of France, and are regarded as a part of the great exposition scheme of 1867. We have thus before us as a people the example of two great enlightened nations; and, even if our exhibition in 1876 were not to signalize the centenary, it would be a duty to ourselves and civilization to secure published contributions to the history of industry and development in the United States.

Time is required for the preparation of such reports, and the period between now and 1876 is short. The work should be apportioned and undertaken without further delay. I suggest that it should be taken in hand by each State, in connection with a State commission, and that a general scheme shall be prepared and issued by the Centennial Commission, so as to promote the work and to secure its efficient and uniform execution. An essential feature of this scheme should be the printing of these reports by each State, not later than January, 1876, in uniform style as regards size, paper, typography, and illustrations, binding, &c., in order that when these reports are assembled together at the exhibition in 1876, they may be so interchanged that each State can secure a complete and uniform series.

Such a complete series would constitute a vast store-house of facts for general use. It would be a foundation for reports upon the exhibition, and would most worthily supplement and illustrate the contributions of each State and Territory. They would be much sought for by the active thinking-men of all nations, who will visit the exhibition for the purpose of gaining a better knowledge of the extent and growth of our institutions, and the conditions that foster such a rapid development of wealth and power. To make these known abroad is a national desire, and one of the most valuable of the results which may be secured by the exhibition.

Information so disseminated would pervade the official literature of Europe, and would no doubt notably increase immigration to our shores of a superior class of men, and return to the nation tenfold the cost of the reports in a very short time.

#### REPORTS ON THE EXHIBITION.

Of the official reports on the Vienna exhibition to be prepared by the various commissions, it is yet premature to speak. It can only be said now that extensive preparations are making to harvest the wealth of information here spread before the world. Each of the great nations will, it is believed, publish a series of volumes. Already articles of permanent value have been printed in such journals as engineering, and in some of the best newspapers. It is an encouraging evidence of general intellectual progress, especially in the United States, that the popular demand for accurate and special information upon all depart-

---

\* See New York Tribune.



ments of science and industry is so great that the journals are justified in making special efforts to procure and publish first-class contributions of that nature.

In 1867, at Paris, the British commission did good service to the literature of that exposition by publishing the reports at an early date in the *Illustrated London News*. They were the earliest reports printed upon the exhibition, and were eagerly sought for. They were the basis for the final and more complete reports which appeared in book-form a year later. Expedition in the publication of results is most important. The value of reports, however excellent they may be, is greatly diminished by delay in their issue.

#### REPORTS FOR THE WORKING-CLASSES.

A programme of a series of reports has recently been issued here in accordance with the suggestions and wishes of the president of the exhibition—the Archduke Reigner.

It states, generally, in order that the invaluable teachings of the exposition may reach and benefit the greatest number, and especially artisans and workmen, it is proposed to publish a series of clearly written reports in a cheap pamphlet-form. They are to be separate and distinct, one from the other, so that any artisan may secure the report upon the art or industry of most interest to him, without having to buy others which he does not care for. A full series of reports costs so much that the poorer men cannot get them, and they are soon absorbed by the great libraries, where they are practically inaccessible to the people. On the other hand, the publication of partial reports in the daily newspapers, though having its advantages, is open to the objection that the form is inconvenient, and does not conduce to the preservation; and also, any report or article is so buried with other subjects that it may never be known to many who would be profited by its possession.

For these reasons the series of reports has been commenced, and they are published cheaply separately.

There were, likewise, lectures given in the hall of the Society of Arts in Vienna, and, the jury-pavilion at the exhibition, upon all classes of objects, the arts, and industries, represented at the exhibition.

It will be remembered that the plan of publishing reports separately, with distinct titles and paging, was adopted in the publication of the reports of the United States commissioners to the Paris Exposition, in 1867. The result was in a high degree satisfactory. Persons interested in asphaltum pavements, for example, could procure the report on that subject without having the entire series; those interested in iron and steel could obtain that report, and so on. This system did not interfere, in any degree, with the continuation or subsequent arrangement and binding of the reports in a series.

There are other advantages of a separate issue of different reports. The manuscripts of the reports are not all ready at one time; or, if possibly they could be, they must wait their turn for the compositor, and, in a printing-office like ours in the United States, constant interruptions occur from the pressure of congressional printing which needs immediate attention. There also is less difficulty about the binding when the reports are separately paged. After they are all completed they can be grouped so as to form volumes of nearly uniform size. Again, several reports may be in progress of printing at the same time; whereas, if the paging were made continuous, the reports would have to be taken up in sequence, and the delay of one would keep back all the others.



At the Paris Exposition of 1867, the following sums were paid for printing and publishing:

Printing circulars .....	41, 793. 56
Printing-entrance tickets .....	8, 806. 10
Printing jury-reports .....	150, 983. 40
Catalogues, (purchased for distribution).....	13, 622. 05
<hr/>	
Total in francs.....	215, 205. 11

#### DAILY NEWSPAPER IN THE EXHIBITION.

A complete newspaper-establishment in operation is not only an attractive but a very useful feature of this exhibition. It is the work of the proprietors of one of the leading journals of Vienna, the *Neue Freie Presse*, and is intended as a first-class advertisement. It occupies a separate building, just south of the Swiss transept of the industry-palace, erected, together with the fittings, at a cost of 250,000 florins. There is on one floor a large model composing-room, a stereotyping and engine room, a press-room, subscription and delivery office, and an office for the superintendent. The press, a modification of our American Bullock's press, is one of the most perfect known. It draws the paper in a continuous sheet from a large roll, cuts it off, prints on both sides, folds the papers, and counts them. The power is supplied by a compact hydraulic engine. All is so arranged that the operations can be conveniently seen by the public, and there is a constant crowd of visitors.

To the usual morning and evening issue of this journal a special sheet, giving the current news of the exhibition, has been added, and is furnished gratuitously to the regular subscribers to the paper. This extra publication is entitled the "*Internationale Ausstellungs Zeitung*." It is the official paper of the general direction. It contains all the public announcements, regulations, and orders to be promulgated concerning the exhibition. It records the principal events and gossip of the exhibition, and has also a series of articles upon it, prepared by competent writers. It thus becomes a valuable historical record in detail of exhibition matters, and is serviceable alike to the commission and to the public.

One of the terms of the concession was that all notices, announcements, and explanations, to which the commissioners desired to give publicity, should be inserted and published in this paper promptly and gratuitously. As all such notices are interesting to the people generally, it is manifestly to the advantage of the paper to receive and to print them, and it involves no sacrifice. Twenty copies of the paper are sent daily to the office of the direction. The price to the public is 20 kreutzers, (equal to 10 cents,) which includes also the morning and the evening paper. The monthly subscription for the whole, delivered, is only 1 florin 80 kreutzers, less than \$1. The advertising patronage of the sheet is considerable.

Not to be outdone in enterprise, and to satisfy the demand from subscribers for information concerning the exhibition, one or more of the rival journals in the city have also started exhibition supplements, and also print all official announcements from the direction. Indeed, such is the very general inquiry for information concerning the exposition, that no journal professing to be *au courant* with the progress of events can afford to be without the latest and most complete intelligence possible from the Prater. The lithographed correspondence issued by the commission, to which I have already referred, is the most convenient and



rapid way of supplying the journals with the information they are constantly seeking.

The publication of a special sheet or newspaper within the precincts of an exhibition is not a new idea. If it has not before been done in Europe,\* it certainly has in the United States, particularly in California, at the annual fairs of the Mechanics' Institute of San Francisco.

The publishers of the Mining and Scientific Press of that city have, for several successive years, erected a press and issued a daily sheet in the exhibition, and given publicity to the announcements by the management and to the wants of exhibitors.†

#### FOREIGN CORRESPONDENTS.

In this connection it is well to refer to the fact that the principal daily journals of the world are represented at the exhibition by correspondents of world-wide celebrity and reputation for ability. Many were present at the grand ceremony of the opening, and the rival journalistic feats are well known to you. These costly efforts and results are a gratifying evidence of the very general interest felt by the people of all lands in international exhibitions. They show, too, that the interest is deeper and broader than mere curiosity or a desire for striking novelties, and that it is an intelligent, progressive interest, demanding the first talent and the ablest pens to satisfy it.

It cannot but be so, and looking back upon the history of industrial expositions, and forward to what they are yet to be, we are justified in the assertion that the press is to be more and more identified with them, and more and more regarded as an element of their growth, vitality, and usefulness.

#### TECHNICAL NEWSPAPERS AND JOURNALS.

The stimulating effect of this exhibition upon the many technical and scientific journals is well marked. The older journals of this kind not only find here the freshest material for their pages, but it is in general prepared to their hands. The new material, also, is so abundant and varied, that new journals are started and active competition is engendered. The illustrated journals here find some of their best subjects, and not only derive a great profit from such exhibitions, but have the satisfaction of largely contributing to the education of the people.

#### EXHIBITION BOOK-STORE.

For the accommodation of the public, and to facilitate the distribution of the publications upon the exhibition, a book-store has been opened in the grounds, where a stock of exposition books and papers is kept for sale. There are also branches of this establishment throughout the exhibition, in the form of book-stalls or tables, where a few copies of each of the books and papers are exposed for sale. A similar plan was adopted at the Paris Exhibition, and was highly conducive to the convenience and instruction of visitors. The catalogues and books generally are sold at extremely low prices, in some instances barely sufficient to cover the cost of paper and printing.

---

\* There was, I believe, a paper printed in the exhibitions of 1851 and 1862.

† The proprietors of this paper have already made formal application to the commission for the privilege of publishing a daily exhibition-paper in the centennial exhibition.

## PHOTOGRAPHS.

The next great adjunct in giving publicity to the work and to the results of an exhibition is photography. It has been most useful at each successive exhibition, and has been the means of widely distributing accurate ideas of the visible and outward appearance of them and of all the details. On no occasion has the aid of the art been more systematically and thoroughly invoked than upon this. From the beginning the progress of the preparation of the ground and of the construction have been indelibly recorded upon the photographic plates. A series of photographs, with numbers and dates attached, has been published. New pictures appear at intervals. They are all prepared by one company, the Vienna Photograph Association, to which the exclusive privilege of taking photographs within the limits of the exhibition has been granted by the general direction. The work commenced in June, 1872, and by the 1st of May, 1873, or during the building period, from eighty to one hundred first-class pictures were published. Pictures are now taken of many different sizes, and are sold at the book-stores and at the stands. The association have their principal depot in the city, and another depot in a large building erected in the grounds of the exposition exclusively for their work. A corps of men with extensive suites of apparatus is employed. Portable dark rooms and cameras on high stands may be seen almost any fine day in the grounds. The association publish a list of their photographs, and are at all times ready to receive and execute orders for special pictures for exhibitors or others. The proofs are either mounted on card-board in the usual way or are sold not mounted, as the purchaser may prefer. The unmounted proofs being much less bulky and being well suited to transmission by mail are preferred by many persons.

Many of the exhibitors find it for their advantage to have large-sized pictures taken of their show-cases. The photographic association has a special tariff for this class of work, which is annexed :

## TARIEF OF PHOTOGRAPHS FOR EXHIBITORS.\*

Size.	Preparatory plates. <i>Florins.</i>	Copies, (1 copy on cartons.) <i>Florins.</i>
42 by 54 centimeters.	70.00	6.00
34 by 40 centimeters.	50.00	4.00
21 by 27 centimeters.	25.00	1.50
Cabinet.	10.00	.60
Stereoscope.	10.00	.60
Visit.	10.00	per 100, .30

There are, no doubt, advantages in placing the entire privilege of taking photographs of the exposition in the hands of one association; but there are also many disadvantages. The spur of competition is wanting to drive forward the work so as to secure to the public a fine selection of pictures at an early date. The demand is great, but the pictures are not to be had in that variety of form and size the people desire. The season is half over and not a single stereograph has appeared. A few pictures of statuary of cabinet size and a few views are to be seen upon the book-stands; but there is no assortment satisfactory to those who wish to buy. There may be, in the far future, after

\* Cabinet, stereoscope, and visit-plates only taken for those persons who had large plates of the same object.

In ordering a large quantity of copies a proportionate discount was allowed.

For very difficult photographs, such as living animals, momentous photographs, photographs of groups, and in general such photographs which require special preparation, are not included in the above prices.



the exhibition is over and the people from all parts of the world have gone home, a fair series of pictures worthy of preservation; but the opportunity to secure a wide distribution of instructive photographs will have been lost. A concession of this kind appears to me to be practically a restriction upon the general usefulness of the exhibition; it is something like giving, if such a thing were possible, the exclusive right of viewing the objects. Unless guarded so as to fully secure the rights of the public, it would, be better not to give any exclusive privilege, but, on the contrary, to give a premium to the individuals or companies who produce the best series of pictures at the earliest date, and at the most reasonable prices. If a participation in the profits is deemed essential, it would be sufficient to have a percentage on the sales within the exhibition limits.

### XIII.—HOTELS AND ACCOMMODATIONS FOR VISITORS.

Within the past ten years the city of Vienna has been greatly improved and made a modern capital. The elegant and commodious Ringstrasse, and its continuations, have taken the place of the old fortifications and the moat. The land has been rented at a very low rate, and free of taxes for a long period. Millions of florins have been drawn to Vienna, and expended in the erection of splendid buildings in all parts of the city. Along the ring streets these buildings are high, artistic, and imposing. They are of brick covered with cement, and are substantially fire-proof and fitted with modern appliances. Among these new buildings are many first-class hotels which did not exist one year ago, and some of which were not completed and ready for visitors until June 1 of this year. These hotels, added to the list of older houses of long-established reputation, offered a wide range of choice to persons arriving in the city. The list of the hotels which may be considered as highly respectable, and most of them first class, comprises no less than seventy-nine. These are all upon the European plan. The stranger pays for his room and attendance, and may or may not, as he chooses, take his meals in the house, where there is invariably a restaurant and an excellent *cuisine*.

The following is a list of some of the largest of the new hotels:

Grand Hotel, built in 1871, (170 by 180 feet,) 300 rooms.

Hotel Austria, (41 by 46 meters,) 150 rooms.

Hotel Donau, 280 rooms and 45 saloons.

Hotel Britannia, 150 rooms and 40 saloons.

Hotel Metropole,\* 400 rooms and 25 saloons.

Union Hotel.

Hotel Wimberger, 200 rooms.

Imperial, 150 rooms.

Hotel de France.

Hotel Goldenes Lamm. †

The expense of rooms at these first-class houses ranges, according to the height and location, from two and two and a half florins a day to twelve or more. For a single bed-room on the third or fourth floor, four to six florins is now the usual charge. Before the opening of the exhibition the same rooms could have been had for two or three florins. Most of these houses are elegantly furnished; they are fire-proof, and are provided with hydraulic elevators for the convenience of guests.

The Metropole, the largest house, is said to have cost about \$300,000.

\* On the Franz Josef's Quai, and much frequented by Americans.

† An old hotel entirely refitted and enlarged.



Like almost all enterprises in this now progressive place, these hotels are owned by joint stock companies, and the value of the shares has greatly fluctuated. The expectation has been that the season would be a very profitable one, and I presume that it has been so far, inasmuch as most of the houses have been full, and the prices range from 50 to 60 per cent. above what has been customary in Vienna.

The serious financial disturbances of the Vienna Bourse, in the early part of the season, caused a great depreciation to almost all securities. The hotel shares participated in this decline. In June last the shares of the Hotel Metropole, for 100 florins paid in, were quoted at 55 florins; Goldenes Lamm, for 100 florins paid in, were quoted at 90 florins; Grand Hotel, for 200 florins paid in, were quoted at 105 florins.

Probably these shares were floated upon the people at figures very much above their present intrinsic value.

I do not, therefore, regard the figures of any value in indicating the financial success of such enterprises, when on a fair basis.

The alarming reports, which have been industriously circulated by the newspapers, of the presence of Asiatic cholera, have had the effect to keep back the current of tourists who patronize first-class houses; and in July the hotels did not have as many guests as they expected. The high prices had also a repelling effect, operating unfavorably, not alone on the receipts of the hotels, but upon those of the exhibition. When the hotel managers combined to advance the prices, the government called them together and expostulated with them on their suicidal course, and obtained a favorable modification of their terms, but it was too late to correct the report that had gone abroad; the mischief was done.

It is interesting to compare the prices of the Grand Hotel of Paris with those established here. They are much lower for equal accommodations. That hotel is larger and more agreeable than any here. It has 700 rooms, and drawing-rooms, luxuriously furnished, at a price from five francs per day and upward, with service included. Here, in Vienna, similar accommodations would cost an equal number of florins, or more than twice as much, and about the same as rooms in the city of New York.

Compared with the population, the city of Vienna appears to be remarkably well supplied with hotel accommodations; and the question is often asked, What will become of these hotels after the exposition season? The relation between the population and the hotel and house accommodations is an interesting and, for us, a practical question. The following figures, drawn, it is said, from good authorities and sources, are interesting in this connection:

At London, there are on an average 8 persons to a house; in Berlin, 32; in Paris, 35; in St. Petersburg, 52; in Vienna, 55. I give these statements for what they are worth, as suggesting investigation for comparison with the condition of population in the chief cities of America. I have not been able to verify them.

#### PRIVATE APARTMENTS.

The prevailing style of building in Vienna, as in Paris and other European cities, greatly facilitates the lodgment of strangers at moderate prices. A very large number of furnished apartments have been for rent in Vienna since the opening of the exhibition. The administration and municipal authorities took early action to establish offices in each district, where persons who had rooms to rent could register them, and where also those wishing to rent rooms could procure information and



make negotiation. Most persons and families who intended to remain in Vienna for two months or more rented rooms at figures below the cost of similar accommodations at hotels.

Over 3,000 apartments were reported to the authorities as ready to be rented to strangers, but by the 10th of May only 117 had been taken. Many of the rooms so reported were undesirable, either from their location, the neighborhood, or the accommodations offered. The most desirable apartments at the commencement of the season could only be rented for the entire season, and at a round price. It was not until June and the advent of warm weather that a more accommodating disposition was shown, and the proprietors were glad of the opportunity to rent by the month at a more reasonable price. From 200 to 500 florins a month was the usual price for a suite of rooms.

It was announced that from 50,000 to 60,000 extra beds could be provided in the city. The capacity of the hotels was rated at 10,000, and the private lodgings at 25,000 more.

#### RESTAURANTS.

The facilities afforded strangers for obtaining meals at their convenience as to time, locality, and style, are probably as great and varied in Vienna as in any European capital. It results from the habits of the people. They resort to the restaurants and cafés for their meals and for social entertainment and amusement.

A distinction is made in Vienna between restaurants and cafés, and beer-halls. There are also wine-houses, small-beer saloons, and the ice-cream saloons, where a variety of cakes, confections, and preserves can be obtained. There are over 200 respectable first-class cafés, 60 first-class restaurants, aside from those of the hotels; a large number of beer-halls, where meals can also be procured; and of refreshment-saloons in connection with the gardens. All these establishments are well conducted, and are so well distributed all over Vienna that a stranger can get a meal at almost any hour or place where it suits his convenience best. These facilities permit of a very large temporary accession to the population of Vienna without inconvenience.

There are, in addition, the very important restaurants of the Prater, and of the exhibition itself, where thousands of persons, and probably four-fifths of the visitors, daily take their lunch or dinner. One of these restaurants, established in the exhibition-ground before the opening, has seats and tables for 4,000 persons, and it is crowded daily. It is said to have cost £9,000, and to have cleared its cost before the middle of May.

There is a branch of the *Trois Frères* of Palais Royal, Paris; several Austrian, one or two Italian, an English, a Russian, and two or three American restaurants, besides a large number of bars, beer-stands, and soda-water fountains.

A comparison of the number of visitors at the hotels *garnis* in Paris in 1867, 1866, and 1868, the year before and the year after the exposition, shows a great difference in favor of 1867. The figures are for 1866, 322,650; 1867, 582,204; 1868, 318,590. Of the visitors in 1867, 381,858 were French, and 200,346 foreigners. But this is understood not to fully represent the movement of strangers in those years.

The receipts of the theaters of Paris for the same years are equally significant. In 1866 they were 9,640,816 francs; in 1867, 16,533,365 francs; and in 1868, 7,189,088 francs.

For a notice of the effects of the exposition upon the movement of persons in omnibuses and carriages, reference is made to the chapter on transportation, &c.



## XIV.—RATES OF ADMISSION—TICKETS, ETC.

Ordinary admissions were without tickets, the cash being paid at the entrances. During the first portion of the season the price of admission was one florin, about 50 cents, for each person, except on Sundays and holidays, when it was reduced one-half, or to 50 kreutzers, about 25 cents, the object being to favor the working and trades people who could not leave their occupations on other days. Later in the season the price was reduced to 50 kreutzers, or 25 cents, and no variation for holidays or Sundays. It was soon found that the receipts at the minimum price of 25 cents were greater than when the admission was placed at twice the amount. This is well shown graphically by the chart annexed to the chapter on visitors, where it is shown that more than double the number of visitors at one florin entered at half of a florin.

Of tickets there were several kinds—season, monthly, weekly, officers', teachers', students', workmen, exhibitors', complimentary. There were also special tickets to the opening ceremony.

The free list was very large. It included not only the officers of the general direction, but the jurors, experts, and all the members of the foreign commissions, and the exhibitors or their agents. It is not, therefore, surprising that the number of such visitors (or entrances) should be almost one-third of the whole when it is considered that persons holding such tickets make repeated visits, and not unfrequently pass in and out several times during the same day. The number of persons who entered during the first month (May) was 484,588, and of this number 200,649 did not pay.

Tickets to officers of the Austrian army were issued at reduced rates, 30 kreutzers, and could be obtained only at the office of the commandant. There were also special rates for students and teachers.

The weekly tickets were first issued at 5 florins, with seven entrance-coupons attached. These coupons could be used upon different days, or in case of a family entering could be used upon the same day. Later, in July, subscribers' tickets were issued giving ten entrances for 4 florins, equivalent to 20 cents for each admission. These tickets were sold at all of the post-offices and at the railway-stations. When the holder of such tickets wished to enter upon the florin days—Wednesday and Saturday—two of the coupons were required.

The season tickets, at 100 florins each, were available for the entire season. For women they were issued at half the price, or 50 florins, but could only be obtained through men who had already purchased a season ticket.

The tickets for workmen were issued at 6 florins a month. This charge applied to all the employés, the mechanics, machine-attendants, the cooks, waiters, and others at the restaurants, &c.

On the opening-day the charge for admission was 25 florins for each person. On the second and third days of May the charge was 5 florins, and on the fourth day 2 florins.

The larger portion of the receipts at great exhibitions is from the low-priced tickets.

In 1855 about as much was taken in at 20 centimes as at 1 franc. In 1862 the larger part of the receipts was from admissions at 1 shilling, sterling. In 1867 the bulk of the receipts was from admission at 1 franc. The price of admission was fixed invariably at 1 franc after the 8th of April, after 10 o'clock in the morning. For the earlier hours, from 6 to 10, 2 francs were required.



At all of the principal entrances there were separate turnstiles for the holders of tickets and for cash visitors. The holders of complimentary tickets also had special turnstiles assigned to them. In this way separate registers were obtained, and there was little time lost in ascertaining the total number of visitors of each description at the close of each day.

Money was not changed at the turnstiles. The exact amount was required, and if the person required change it was supplied at a little office at one side of the entrance for a small percentage.\*

Holders of season and complimentary tickets were required to write their names on the back of their tickets, and in a special register when the gate-keeper demanded it; this being intended as a check against the transfer of tickets, which was forbidden.

Exhibitors or their agents were entitled to an entrance-ticket. Complimentary tickets were issued to the foreign commissioners, to members of the press, and to the jurors and experts during the period of their labors, and a certain number were supplied to the foreign executive commissioners for their assistants and the *personnel* of their offices.

The first regulations required the renewal or re-issue of all complimentary and exhibitors' tickets at the end of each month.

The trouble, expense, delay, and general inconvenience which this rule caused led to its abandonment. It was found impossible to renew the tickets in season, for they were seldom applied for until the last day of the month or the first day of the new month, and hundreds of persons were waiting in line at the offices for their new tickets. Many paid the entrance-fee in preference to waiting for new tickets. Tickets good for the whole period were afterward supplied to the commissions. It is said that there were over thirteen different kinds of tickets.

#### XV.—VISITORS AND RECEIPTS.

The total number of visitors from the 2d of May until the 2d of November, inclusive, was 7,254,687, of which 2,196,360 were non-paying, giving 5,058,327 as the number of paying visitors, as below :

Season, complimentary, porters', and workingmen's tickets..	2, 196, 360
Week-ticket coupons .....	85, 864
Officers' tickets .....	74, 334
Tenants' tickets, ("Lehmann-Karten") .....	4, 278
Day-tickets .....	41, 754
Students' tickets .....	237, 102
Subscribers' tickets .....	1, 141, 230
Paying visitors .....	3, 473, 765

---

Total number of visitors..... 7, 254, 687

This total does not include the entrancés prior to the opening, during the period of installation.

---

\* The maximum tariff for changing French money at the entrances to the Paris exposition was :

Pieces of 2 to 5 francs .....	0. 05
Pieces of 10 francs .....	0. 10
Pieces of 20 francs .....	0. 15
Pieces of 40 francs .....	0. 20

Pieces or bills of 50 francs or of 100 francs, 0.20 franc; bills of 200 francs, 0.40; 500 francs, 0.60; and 1,000 francs, 0.75 franc.

## THE TOTAL RECEIPTS FROM VISITORS.

The total receipts of the exhibition from visitors from the beginning to the end of the 2d of November, were 2,567,297 florins, being from—

Sale of tickets.....	617, 086. 06
Receipts at doors .....	1, 950, 211. 50
Florins.....	2, 567, 297. 56
Or approximately.....	\$1, 283, 648. 78

The greater portion of this sum was taken in cash at the doors, and not from the sale of season and subscription tickets, as will appear from the following analytical statement of sales of the tickets of several grades, not only at the chief office but at all the offices and postal stations where tickets were sold :

*Receipts to 1st November.*

The receipts and sales of tickets up to the 1st of November, the official end of the exhibition, were reported as below :

	Florins.
Week-ticket coupons, 85, 757, at 71 kr. (7 à 5 fl.) .....	60, 887. 47
Officers' tickets, 72,652, at 30 kr.....	21, 795. 60
Lehmannfarten ..... 122, at 80 kr....	97. 60fl
Lehmannfarten ..... 489, at 71 kr....	347. 19fl
Lehmannfarten ..... 3, 577, at 40 kr....	1, 430. 80fl
Total..... 4, 188 .....	1, 875. 59
Day-tickets, at 1 fl ..... 1, 963 .....	1, 963. 00fl
Day-tickets, at 50 kr ... 38, 291 .....	19, 145. 50fl
	21, 108. 50
Students' tickets... 226,835, at 30 kr .....	68, 050. 50
Subscription-tickets 1,108,421, at 40 kr .....	443, 368. 40
Total value of tickets.....	617, 086. 06
Cash at doors.....	1, 879, 619. 50
Total.....	2, 496, 705. 56

And for the two first days of November as follows :

	November 1.	November 2.
Season, workmen's, and other tickets .....	13, 605	17, 707
Week-ticket coupons .....	46	61
Officers' tickets .....	619	1, 063
Tenants', ("Lehmann") ..		33
Day-tickets .....	495	1. 005
Students' tickets .....	4, 237	6, 030
Subscription-tickets .....	13, 175	19, 691
Paying at the doors .....	47, 736	93, 447
Total... ..	79, 913	139, 037

The receipts for these two days were apparently 70,591.50 florins,\* which, added to the above total, makes the sum of 2,567,296 florins as the receipts from visitors.

\* Deduced by difference from a statement in the Wiener Zeitung, November 3, 1873.



The free-list at this exhibition was very large. It included not only the officers of the government, the imperial commission, and the executive staff, but the jurors, experts, and all of the members present of the foreign commission, and the exhibitors or their agents. It is to be considered also that persons holding complimentary tickets for the season made frequent visits, often entering several times in the course of a day, each entrance counting as a visit.

The number of visitors in each month were as below, the highest being in the month of October.

*Number of visitors in each month.*

Months.	Day-tickets.	Tickets at reduced price.	Total of paying.	Non-paying.	Total.
May .....	215,878	28,515	244,393	189,883	464,276
June .....	684,056	113,077	797,133	418,784	1,215,917
July .....	517,707	253,980	771,687	413,808	1,185,495
August .....	501,361	322,839	824,200	354,645	1,178,845
September .....	654,519	404,566	1,099,085	326,555	1,425,640
October .....					1,473,602
November 1 and 2 .....					218,950
Totals to November 3, 1873 .....					7,254,687

The highest number of visitors in one day was at the close, on the 2d of November, there being 139,037 persons. There were 80,000 upon the 1st of November, 106,000 on the holiday, the 22d of August, and 85,000 on Whit-Monday, June 2.

In a review of the attendance at this great exhibition, we should not lose sight of the unexpectedly unfavorable conditions which combined to lessen the number of visitors. These were chiefly the prolonged cold and wet of the first two months; the advance in prices of living and apartments; the financial crash; the unfavorable comments of the press; and the reports of cholera and the insufficiency of the means of access. The exhibition also was not ready on the opening-day, and the bad impression this produced deterred many from going to Vienna, and caused others to postpone their visit until August or September, when the presence of cholera kept them away. The tardiness of the work of installation was a fruitful source of disappointment.

Toward the end of the month of May the work of unpacking and arranging objects began to show some fruit, especially in the courts and in the outside buildings, and the public were gradually admitted to the spaces previously railed off to all but commissioners and exhibitors. The grand central nave also became more and more attractive by reason of the unpacking and placing of rich objects in the costly plate-glass show-cases and under the upholstered canopies. With these gradually unfolding attractions and more favorable weather the number of visitors to the Prater greatly increased, the turnstiles recording as high as 50,521 persons on Sunday, May 18; 85,577 on Monday, (Whit-Monday,) June 2; and 78,060 on Sunday, June 8. These were half-florin days, and the attendance was exceptionally large. The average of the florin-days was about 25,000; from 9,000 to 10,000 paying, thus making the receipts from \$4,500 to \$5,000 daily, exclusive of the Sundays and holidays.

On Monday, June 2, of the whole number, 69,185 paid a half florin each, giving 34,592 florins, or the equivalent of \$17,296. This was the highest figure attained. It must, however, be observed that there are also some entries by officers' and weekly tickets, the proceeds of which are not included above, inasmuch as the amounts were not stated.

The total number of visitors during the month of May is reported as 484,588, of whom 223,297 paid the usual fee, and 30,631 entered upon officers' and weekly tickets. The non-paying visitors numbered 200,649 in the aggregate. Of the paying visitors, some paid half of a florin, and the others one florin. The total receipts for the month were stated as 176,116 florins—equivalent to \$88,098, an average of less than \$3,000 per day. This includes the receipts from all descriptions of tickets; the following, for example:

379 tickets to opening ceremony, at 25 florins.

425 season tickets, at 100 florins.

348 season tickets, at 50 florins.

3,509 weekly tickets, at 5 florins.

9 monthly tickets, at 6 florins.

94 monthly tickets, at 3 florins.

This statement is interesting and significant, showing, as it does, the very small number of season and other tickets sold in comparison with the number of visitors. Each 5-florin ticket gave seven independent admissions. It was therefore economy for a party of two or three to buy them, rather than to pay for single admissions. Each coupon admitted one person.

#### CHANGE IN THE RATES OF ADMISSION.

After the 1st of June there was a change in the rates of admission. In May the only half-florin days were Sundays and fete-days, but in June Mondays, Thursdays, and Sundays, three days out of the seven, were half-florin days, and upon other days one florin was charged to all except officers of the army, who, by regulation, were enabled to buy tickets for 30 kreutzers each—.30 of one florin, or about 15 cents.

Students' tickets and tickets for workingmen were provided at reduced rates, in response to repeated and persistent demands. This departure from the fixed programme, in regard to the admission price, was reluctantly made, but it became obvious that one florin was too high a price to suit the mass of the people and to secure the best returns.

#### HOURS OF OPENING AND CLOSING.

There was also a change in the hours of opening and closing. The doors were opened at 9 a. m., instead of 10 a. m., and they were not closed until 7 p. m., instead of 6, as before. This gave two hours more daily to the public, and was much more satisfactory to exhibitors. At half past six a large bell in the rotunda was rung, and the doors at each end and of most of the transepts were closed. The police and guards then walked through the building from each end toward the rotunda, keeping the few remaining visitors before them until they were all driven out of the center.

The weather had a very great effect upon the receipts. Upon stormy days there were comparatively few visitors. The weather during April and May was exceedingly unpropitious, and, by its effect on the attendance, made it manifest that the climatic conditions of any locality con-



stitute an essential element of the success of an exhibition, and that they should be regarded in fixing the dates of opening and closing. There is no doubt that the unfavorable influences of the weather of the opening month of the exhibition greatly impaired the success of the whole undertaking through a loss of *éclat*, prestige, and interest which should never be allowed to flag. The interest in an expedition is cumulative, and increases measurably in geometrical ratio. The more enthusiasm is manifested, the more it is aroused; as the number of visitors increases, the more others wish to go. It results, therefore, that the attendance increases toward the last. This accords with experience.

The receipts for each of the last five days of the Paris Exposition were greatly in excess of those of any other similar period; they were nearly three times as great as usual. From an average of about 45,000 francs daily during November, they rose to 174,405 on the 27th; 140,780 on the 28th; 133,003 on the 29th; 140,573 on the 30th; 141,245 on the 31st.

At Vienna, as we have seen, the number of visitors was the greatest in the last month, and from a general average of 25,000 in May, 40,000 to 50,000 in July, rose to 80,000 on the 1st of November, and 139,000 on the closing day.

Although there were so many drawbacks to the success of the exhibition in point of number of visitors and the receipts, there were some peculiarly favorable conditions. One especially was the location near the populous part of a city, with a compact population \* in the favorite

#### \* METEOROLOGY OF VIENNA.

The prevailing wind is from the northwest, following the valley of the Danube.

On an average there are during the year in Vienna 31 per cent. of rainy days, 10 per cent. of snowy days, and 21 per cent. of cloudy days. The mean height of the barometer, deduced from monthly means for 90 years, is 744.9 millimeters. September and October are the months in which there are the fewest rainy days.

The range of temperature for the several months of the year is as follows: \*

Month.	Centigrade.	
	Lowest.	Highest.
January.....	−10.7	10.0
February.....	− 9.4	11.2
March.....	− 6.3	16.5
April.....	− 1.3	23.5
May.....	+ 2.8	28.5
June.....	+ 9.2	31.4
July.....	+11.0	32.5
August.....	+ 9.8	32.7
September.....	+ 5.1	28.6
October.....	+ 0.7	23.5
November.....	− 6.1	14.8
December.....	−10.6	9.8
Average.....	−14.4	33.8

\* The absolute values of the minima are somewhat lower, and of the maxima higher. The above figures represent the normal condition.

#### \* AREA AND POPULATION OF VIENNA.

The city of Vienna covers a space of 5,625 hectares—1,025 geographical square miles.

In 1872 there were 911,271 inhabitants, including the fanboroughs—602,502 within the lines, and 308,769 outside. There were in addition 30,000 men in the garrison. Of this

part, where the people have for a long series of years been accustomed to go for recreation and pleasure. The following extracts from my dispatches of June 14 and June 18 amplify this subject, and refer also to music as an important element of the success of an exhibition :

#### ATTRACTIONS OF THE PRATER.

The carriage avenue of the Prater is the fashionable drive of Vienna, and is celebrated the world over. It is the resort of all classes, from the Emperor to the shop-keeper. Public carriages are not excluded. On fine afternoons it seems as though most of the carriages of the city were concentrated there. I have counted vehicles passing in one direction past a given point at a rate of five hundred per hour. The display is so brilliant that tens of thousands of spectators are attracted to the roadside, and stand crowded along the curbstones, watching for the coming of an archduke, or, perhaps, the Emperor or Empress.

To resort to the Prater has become a habit with the Viennese. There are no accessible counter-attractions comparable with it. To the charms of the unequalled shaded avenues and the broad stretches of green lawns, there are added the brilliant moving throngs of people and equipages, and the fascinations of music. Tastefully constructed restaurants, with brilliantly lighted gardens, full of tables and seats under the trees, accommodate thousands of people, who lounge away the summer evenings, sipping coffee and beer, and puffing their cigars.

To this old-established habit of going to the Prater to spend the afternoon no small portion of the measure of success which attends the exhibition is undoubtedly due. The exhibition is only one great attraction more than usual. The tens of thousands who enter its gates are only a fractional part of the numbers outside, in the Prater grounds.

The out-of-door life of the people ; their resorting to coffee-houses and to restaurants for their meals to a great extent ; in other words, their habit of looking away from home for entertainment and pleasure, no doubt, also, promotes the attendance at the exhibition. Other things being equal, I should say that the percentage of visitors to an exhibition would be greater in Vienna than in Philadelphia by reason of these habits of life.

There are no less than seven or eight large cafés in the immediate vicinity of the exposition, each capable of accommodating from 1,000 to 3,000 persons with seats and refreshments. Several of these employ full orchestra bands, and keep up a constant succession of well-performed airs and selections from standard operas. By paying for a glass or two of beer the loungeur may have a seat and hear music by distinguished performers, during the whole evening.

#### MUSIC AT THE EXPOSITION.

I am thus led to report, in this place, upon a leading and very attractive feature of the exposition. Reference has before been made to the fact that concerts were held in the afternoons. The extremely disagreeable weather for a long time prevented attendance, and the concerts had to be omitted. They are now held regularly each afternoon, from 4 until 7 o'clock, in the large open space opposite the pavilion of the Viceroy of Egypt. On Sunday afternoon last there were probably three thousand persons in attendance, and the average is about fifteen hundred. But the people come and go constantly. There are a thousand or two iron chairs in front of the stand, and about as many arm-chairs along the walks and among the flower-beds at a greater distance. The price of a seat, which at the first was fifty krentzers, has been reduced to twenty krentzers. Several women are employed to collect this sum from those who take a seat.

The orchestra stand is a cheap but tastefully executed construction with an arched ceiling supported on light columns. It is open in front and on the two sides, but the back is closed. It stands on the edge of the thick woods, which serve both as a pleasant back-ground to the picture and to shade the audience from the afternoon sun. The space in front is level and is firmly graveled. When the weather is fine, this

---

population 46 per cent. were engaged in industrial pursuits ; 22 per cent. in personal service ; 13 per cent. of the class of property-holders and landlords, (rentiers ; ) 7 per cent. merchants ; 3 per cent. were engaged in the industry of transportation ; and 9 per cent. in other occupations. The increase of population of late has amounted to 4 per cent. per annum.

The number of houses is counted at 18,573. The average population to a house is fifty-nine persons within the lines, and thirty-nine outside of the lines. In any comparison with the number of houses in the cities of the United States, the different method of construction is to be considered.



musical arena is a most delightful place of resort for an hour or so, after the fatigue of walking through the halls of the exposition.

The orchestra consists of about eighty persons, and is under the direction of John Strauss, the court music director, and Julius Langenbach as leader.

Fourteen choice selections are performed daily. The programme, of which I append a copy, is divided into two parts.

### “CONCERT DER WELTAUSSTELLUNGS-CAPELLE.

DIRECTOR VON JOHANN STRAUSS, K. K. HOFBALLMUSIK-DIRECTOR.

CHIEF D'ORCHESTRE, JULIUS LANGENBACH.

*Von 4—Uhr Nachmittags auf dem Mozartplatze, gegenüber dem Palais des Vizekönigs von Egypten.*

(Bei günstiger Witterung.)

#### PROGRAMM.

##### I. ABTHEILUNG :

1. Ouverture zu ‘Der König von Yvetot,’ von Adam.
2. ‘Wildfeuer,’ Polka, von Johann Strauss.
3. Thema mit Variationen, von Richard Wuerst.
4. ‘Dorfschwalben,’ Walzer, von Joseph Strauss.
5. Phantasie über Themen, von Karl Maria v. Weber.
6. ‘Wilde Rose’ Polka Mazurka, von Joseph Strauss.
7. Divertissement aus ‘Ariele,’ von Bach.

##### II. ABTHEILUNG :

8. Ouverture zu ‘Wilhelm Tell,’ von Rossini.
9. ‘Lust’ger Rath,’ Polka, von Johann Strauss.
10. ‘Bunte Reihe,’ Potpourri, von Radeck.
11. ‘Tausend und eine Nacht,’ Walzer, von Joseph Strauss.
12. Phantasiestück, von Neswadba.
13. Scherzo aus ‘Der Sommernachts Traum,’ von Mendelssohn.
14. Verbrüderungsmarsch, von Johann Strauss.”

The programme for the day is published in full each morning in the *Ausstellungs-Zeitung*, and sometimes for two days in advance. These concerts are alone worth the price of admission to the grounds, and there is no doubt that they exert a very important influence upon the number of visitors and the daily receipts. It is regarded as a great privilege to hear and see John Strauss performing at one of these concerts. When he appears there are loud acclamations of delight. His whole frame appears to be so saturated with music that it moves in harmony with it. At the Volks garten, a place of resort on the side of the city opposite to the exposition, large audiences are attracted during fine evenings when it is known that Strauss is to play. The entrance price to the garden is two florins.

The important influence of musical performances upon the receipts of exhibitions is generally recognized, and in planning a building this subject should be well considered.

At the Sydenham Palace music is an established feature, and costly arrangements are made for its success and for the convenience of the audience. There are operatic performances each afternoon at three o’clock. Thousands of pounds sterling are expended annually for these attractions.

So also at the series of annual international exhibitions in London music is found to add greatly to their success. Concerts are given in the Royal Albert Hall; one, for example, is to be given upon the occasion of the visit of the Shah of Persia, to which only the holders of season tickets to the exhibition will be admitted. The doors of the exhibition will be closed to all others on that day. In the same notice the price of the season tickets is stated to be one guinea, and those who buy a season ticket may then secure seats in the concert-hall at special rates, ranging from one to two pounds sterling.

There are very general expressions of regret here that the great rotunda of the exposition was not kept clear of all obstructions and reserved as a concert-hall. The want of it was most felt during the month of clouds and rain, which rendered the out-of-door concerts inaccessible. Not only the visitors say that it would be preferable to

have musical performances in the rotunda, but it is the conviction of most of the exhibitors. They are in favor of a combination of attractions within the building.

It is certain that the rotunda, if cleared, would be a favorite place of resort for promenading and resting, particularly if it were adorned with flowers and shrubs, and enlivened by music. Out-of-door concerts need not be abandoned, but when the weather is unfavorable for them they could be given inside. Music at intervals during the day, in the rotunda, would add greatly to the popularity of the Exposition.

VIENNA, AUSTRIA, *June 18, 1873.*

In my last dispatch, of the 14th June, I gave some general statements regarding the number of visitors at the exhibition, from which you will see that the receipts from that source are by no means as great as was estimated. The average attendance for this month up to the 15th, inclusive, has been about 41,500 daily, and the total receipts are about 243,000 florins, equivalent to about \$121,500. At this rate the total number of visitors for the whole season would be about 7,636,000, and the receipts about 2,916,000 florins, or \$1,458,000. The estimate presented by Baron Schwarz to the Chamber of Deputies contemplated a revenue of eleven millions of florins from the admissions alone, as already stated in my first dispatch. I refer to it again now in consequence of having these partial returns of the actual receipts, and in order to again direct your attention to the fact that each successive great exhibition emphatically teaches us that we are not to expect them to be sustained and paid for by the comparatively few of a great population who are able to visit them. It is too much to expect. Again, we are equally taught that the beneficent effects of great exhibitions are not confined to the few, but that they are as widely diffused as civilization, and that the direct advantages to the country holding the exhibition are very great. Inasmuch as the advantages are widely diffused, so also the costs should be. The whole population should bear the expense, and the most equitable way to secure this result would be by a national appropriation.

There is evidently here a very considerable degree of disappointment that the receipts from the exhibition are not greater, although, as I stated in my first dispatch to you, the estimates were regarded as much too high, and few thinking persons expected that the number of visitors would be as great as stated. I had, before leaving Philadelphia, prepared some interesting calculations upon the per cent. of populations likely to visit exhibitions, and the results are sustained by the experience had here up to this time. These figures I hope to have ready for my final report.

To these attractions we may add the so-called *worstel prater*, or the people's prater; that is, a labyrinth of small shows and refreshment saloons adjoining the exhibition and on the road to it. It has been a place of popular resort for many years. There are to be found hippodromes, cosmoramas, bowling-alleys, wax figures, stuffed animals, and monstrosities. Being on the direct omnibus route to the exhibition, and not far from the western entrances, it contributed in no small degree to the popular interest in the exhibition. The relative positions of the *worstel prater* and the exhibition are well shown on one of the maps submitted. Another map shows also the position of the prater and its attractions to the various avenues of communication. The depots of the Great Northern Railway are near by, and this is connected by a high level with the depots of the Southern Railway, in another part of the city. Branch tracks for freight lead to the exhibition.

The various means of access to the exhibition, and their influence upon the number of visitors, have been separately discussed—*vide* chapter on "access and transportation."

#### VISITORS TO THE ROTUNDA.

For a small additional price visitors were permitted to ascend to the top of the rotunda. There were 103,027 visitors to the first lantern, so-called, and 93,205 to the second. Had the means of access been early provided the number would have been much greater. These points gave a splendid view of the whole grounds and of the country around, and many were disappointed that the arrangements for the ascent were not made early in the season. When the means of access were pro-



vided in the latter part of July, and the hydraulic lifts in August, the doors leading to each were crowded by persons anxious to pay the fee and go up.

The proposed "captive balloon" was not a success. It was to be moored in such a way that it could be drawn down to receive a load.

#### NUMBER OF VISITORS COMPARED WITH THE POPULATION.

The best way to arrive at a fair estimate of the number of visitors that may be expected to attend the exhibition in Philadelphia is to ascertain the percentage of visitors compared with the population at the leading great exhibitions.

At Vienna, taking the population of the Austro-Hungarian monarchy at 35,644,858, and the number of visitors in round numbers at 7,500,000, percentage is 21.

At Paris, 1867, population of France say 36,000,000, and the number of paying visitors 9,143,279, the percentage is 25.

In Great Britain, 1862, population 31,000,000, visitors 6,211,103, the percentage is 20.

In New York, in 1870, the number of visitors to the American Institute Fair was 280,000, and in 1871, 300,000. This last was about 21 per cent. of the population of the city.

At the Cincinnati Industrial Exhibition, 1871, the number of visitors was 474,000, or 18 per cent. of the population of the State.

The area over which the population is distributed should be taken into consideration.

#### THE PRICE OF ADMISSION AS AFFECTING ATTENDANCE.

The direct influence of the price of admission upon the attendance was made manifest from the opening day to the end by the returns of the florin days as compared with those when only half a florin was charged for admission. In order to make the difference the more evident, and also to show the influence of the weather, of Sundays, and of feast days, I have prepared a graphic representation of the attendance for the months of May and June. (Graphic chart inclosed.) It also represents the number of visitors to the Paris Exposition of 1867 for a similar period.

In both exhibitions the attendance upon Sundays was greater than upon week-days, except only upon holidays. The great mass of artisans and laborers are unable to leave their daily avocations to go to the exhibition, and gladly avail themselves of the opportunity to enjoy the educational and elevating influences of the exposition upon the Sabbath.

In Paris, after the first few days succeeding the opening ceremony, the rate of admission was uniformly one franc. The line representing the attendance, therefore, shows more distinctly and justly the effect of the Sabbath upon the attendance than the line representing the number of visitors at Vienna, this last being complicated by the variation in the price of entrance.

It is to be noted also that the number of visitors at half of a florin is invariably greater than double that at one florin. Consequently the daily receipts at half a florin are much greater than when the price of admission is one florin. It became clear that for the financial success of the enterprise, it would be best to reduce the price, and toward the middle of June this was done for certain days in the week.

During the month of June there were fourteen days when the en-

trance-price was 50 kreutzers, and sixteen days when it was 1 florin. The fourteen days at 50 kreutzers yielded 252,002 florins for 504,005 persons, while the sixteen days gave only 179,151 florins for the same number of persons. The total receipts of the month was, including the weekly tickets, and the entrances at reduced prices, 453,995 florins, averaging about 15,000 florins a day, or about \$7,500.

Tabular statements of the number of visitors of each class per diem are instructive.

Statement of returns of the Universal Exhibition of Vienna for the month of May, 1873.

Day of week.	Day of month.	Total visitors.	Paid at gates.	Season tickets.	Officers & weekly.	Complimentary and exhibitors.	Remarks.
Thursday.....	May 1	30,000	.....	.....	.....	.....	
Friday.....	May 2	3,550	1,002	.....	.....	2,548	
Saturday.....	May 3	5,225	1,005	.....	.....	4,220	
Sunday.....	May 4	7,497	1,999	334	.....	5,164	
Monday.....	May 5	11,377	4,149	611	590	6,027	
Tuesday.....	May 6	15,077	6,781	360	943	6,993	
Wednesday.....	May 7	14,564	6,381	.....	1,427	6,756	
Thursday.....	May 8	14,401	5,553	.....	1,348	7,500	
Friday.....	May 9	8,858	2,103	.....	566	6,189	
Saturday.....	May 10	12,382	3,656	.....	1,181	7,545	
Sunday.....	May 11	30,938	21,010	.....	850	9,078	
Monday.....	May 12	12,847	3,944	103	831	7,969	
Tuesday.....	May 13	14,253	4,541	121	877	8,714	
Wednesday.....	May 14	.....	.....	.....	.....	.....	} Not returned.
Thursday.....	May 15	.....	.....	.....	.....	.....	
Friday.....	May 16	17,984	6,731	.....	1,517	9,736	
Saturday.....	May 17	18,335	7,143	.....	1,760	9,432	
Sunday.....	May 18	50,521	39,142	.....	758	10,621	
Monday.....	May 19	15,823	6,433	.....	1,599	7,791	
Tuesday.....	May 20	13,753	5,698	.....	1,588	6,467	} Not returned.
Wednesday.....	May 21	.....	.....	.....	.....	.....	
Thursday.....	May 22	27,193	17,728	.....	592	8,873	} Not returned.
Friday.....	May 23	.....	.....	.....	.....	.....	
Saturday.....	May 24	.....	.....	.....	.....	.....	
Sunday.....	May 25	48,575	37,115	.....	1,334	10,126	
Monday.....	May 26	20,595	8,084	.....	2,009	10,502	
Tuesday.....	May 27	18,272	7,295	.....	1,915	9,062	
Wednesday.....	May 28	17,297	5,738	.....	1,689	9,870	
Thursday.....	May 29	18,251	6,709	.....	1,820	9,722	
Friday.....	May 30	16,707	5,938	.....	1,792	8,977	
Saturday.....	May 31	20,312	7,410	.....	2,116	10,766	
Total for .....	25 days..	484,588	223,297	.....	.....	260,649	



Statement of returns at the Universal Exhibition of Vienna for the month of June, 1873.

Date.		Total visitors.	Paid at gates.	Officers & weekly tickets.	Complimentary and exhibitors.	Workmen.	Rate of admission.	Receipts, &c., reduced to florins.	Remarks.
							Fl.	Florins.	
June	1	28,704	22,722	985	4,947	-----	$\frac{1}{2}$	11,361 00	Sunday; very stormy
	2	85,577	69,185	3,585	8,322	-----	$\frac{1}{2}$	34,592 50	
	3	30,377	17,759	3,439	9,179	-----	1	17,759 00	
	4	25,648	13,527	2,852	9,269	-----	1	13,527 00	
	5	37,289	14,981	2,953	7,322	-----	1	14,981 00	
	6	24,541	11,990	2,634	9,917	-----	1	11,990 00	
	7	27,971	9,516	3,138	8,967	6,350	1	9,516 00	
	8	78,060	59,380	4,217	9,964	4,499	$\frac{1}{2}$	29,690 00	Sunday.
	9	41,267	23,913	2,765	10,076	5,513	$\frac{1}{2}$	11,956 50	
	10	28,632	10,402	-----	-----	-----	1	10,402 00	
	11	29,252	10,809	-----	-----	-----	1	10,809 00	
	12	53,494	35,203	-----	-----	-----	$\frac{1}{2}$	17,601 50	Fete; rainy.
	13	30,771	12,431	3,868	9,295	5,177	1	12,431 00	
	14	30,751	11,122	4,337	10,445	4,847	1	11,122 00	
	15	68,160	49,136	5,405	9,667	3,952	$\frac{1}{2}$	24,568 00	Sunday.
	16	48,362	30,615	2,758	-----	-----	$\frac{1}{2}$	15,307 50	
	17	30,936	12,438	4,018	-----	-----	1	12,438 00	
	18	30,580	11,643	3,744	-----	-----	1	11,643 00	
	19	53,551	34,477	3,566	-----	-----	$\frac{1}{2}$	17,288 50	
	20	29,655	10,220	3,449	-----	-----	1	10,220 00	
	21	30,432	10,341	4,564	-----	-----	1	10,341 00	
	22	59,471	42,436	4,743	-----	-----	$\frac{1}{2}$	21,268 00	Sunday.
	23	46,316	28,036	2,401	-----	-----	$\frac{1}{2}$	14,018 00	
	24	31,043	10,823	2,528	-----	-----	1	10,823 00	
	25	31,133	10,520	3,886	-----	-----	1	10,520 00	
	26	49,683	30,104	3,148	-----	-----	$\frac{1}{2}$	15,052 00	
	27	29,815	9,736	3,377	-----	-----	1	9,736 00	
	28	27,756	8,652	3,470	-----	-----	1	8,652 00	
	29	52,474	34,937	4,496	-----	-----	$\frac{1}{2}$	17,468 50	Sunday.
	30	46,227	27,002	3,107	-----	-----	$\frac{1}{2}$	13,501 00	

Tabular statement of the number of visitors at the Vienna Exhibition in July, 1873.

Date.		Daily tick- ets.	Weekly and officers.	Total pay- ing.	Not paying.	Total.	
1873.							
July	1 .....	*K..	14, 167	3, 010	17, 177	14, 275	31, 452
	2 .....	G..	9, 471	4, 047	13, 518	14, 122	27, 640
	3 .....	K..	27, 205	8, 215	35, 420	15, 598	51, 018
	4 .....	G..	15, 222	5, 833	21, 055	15, 579	36, 634
	5 .....	K..	9, 079	4, 691	13, 770	14, 815	28, 585
	6 .....	K..	42, 301	11, 113	53, 414	12, 369	65, 783
	7 .....	K..	23, 066	8, 019	31, 085	13, 887	44, 972
	8 .....	K..	17, 896	8, 185	26, 081	14, 877	40, 958
	9 .....	G..	90012	5, 616	14, 628	14, 439	29, 067
	10 .....	K..	23, 515	12, 184	35, 699	14, 597	50, 296
	11 .....	K..	14, 111	79, 991	22, 102	14, 246	36, 348
	12 .....	G..	7, 137	4, 721	11, 858	14, 401	26, 259
	13 .....	K..	27, 294	9, 729	37, 023	10, 754	47, 777
	14 .....	K..	21, 232	10, 214	31, 446	13, 632	45, 078
	15 .....	K..	13, 880	7, 400	21, 280	12, 616	33, 896
	16 .....	G..	9, 313	5, 937	15, 250	13, 917	29, 167
	17 .....	K..	21, 670	13, 279	34, 949	13, 969	48, 918
	18 .....	K..	15, 250	9, 576	24, 826	13, 466	38, 292
	19 .....	G..	6, 886	4, 879	11, 765	12, 795	24, 560
	20 .....	K..	30, 824	13, 264	44, 088	11, 658	55, 746
	21 .....	K..	19, 731	11, 633	31, 364	13, 528	44, 892
	22 .....	K..	16, 684	10, 841	27, 525	12, 841	40, 366
	23 .....	G..	7, 350	5, 331	12, 681	13, 398	26, 079
	24 .....	K..	18, 000	12, 712	30, 712	12, 742	43, 454
	25 .....	K..	12, 828	9, 115	21, 943	13, 049	44, 992
	26 .....	K..	7, 836	5, 469	13, 305	11, 643	24, 948
	27 .....	K..	25, 747	10, 940	36, 687	10, 731	47, 418
	28 .....	K..	16, 402	9, 236	25, 638	12, 267	37, 905
	29 .....	K..	13, 690	10, 365	24, 055	12, 772	36, 827
	30 .....	G..	5, 293	3, 818	9, 111	12, 158	21, 269
	31 .....	K..	13, 615	8, 617	22, 232	12, 667	34, 899
Total.....			516, 637	253, 980	770, 617	513, 808	1, 284, 425

\* K indicates the half-florin days ; G the florin days.

Visitors to the exhibition in the month of August.

Date.		Paying.	Tickets at reduced price.	Number of paying visitors.	Non-pay- ing.	Total.
1873.						
August	1.....*K..	10,659	6,344	17,003	12,369	29,372
	2.....K..	10,859	7,671	18,530	2,066	30,596
	3.....K..	24,303	9,119	33,422	9,924	43,346
	4.....K..	17,633	10,511	28,144	13,010	41,154
	5.....K..	14,953	10,338	25,291	11,838	37,129
	6.....G..	5,944	4,506	10,450	11,486	21,936
	7.....K..	14,582	10,877	25,459	11,584	37,043
	8.....K..	10,798	8,872	19,670	11,663	31,333
	9.....K..	9,001	7,792	16,793	11,073	27,866
	10.....K..	18,087	10,055	28,142	9,741	37,883
	11.....K..	16,292	11,671	27,963	11,805	39,768
	12.....K..	13,626	10,780	24,406	11,735	36,141
	13.....G..	6,219	5,113	11,332	11,506	22,838
	14.....K..	12,898	10,945	23,843	9,988	33,831
	15.....K..	24,701	14,615	39,316	11,466	50,782
	16.....K..	14,417	11,213	25,630	11,667	37,297
	17.....K..	25,888	12,530	38,418	10,004	48,422
	18.....K..	17,723	12,643	30,366	11,615	41,981
	19.....K..	14,485	11,028	25,513	11,706	37,219
	20.....K..	18,560	14,784	33,344	12,636	45,980
	21.....K..	14,402	10,740	25,142	11,715	36,857
	22.....K..	52,190	35,654	87,848	19,053	106,897
	23.....K..	14,778	1,713	16,491	10,939	27,430
	24.....K..	23,325	9,728	33,053	9,704	32,757
	25.....K..	16,564	10,566	27,130	11,214	38,344
	26.....K..	13,380	9,505	22,885	10,892	33,777
	27.....K..	11,347	8,448	19,795	10,782	30,577
	28.....K..	12,457	8,869	21,326	10,799	32,125
	29.....K..	9,936	7,501	17,437	10,106	27,543
	30.....K..	10,294	8,079	18,373	10,729	29,102
	31.....K..	21,060	10,629	31,689	9,830	41,519
Total.....		501,361	322,839	824,200	354,645	1,178,845

\* K indicates the half-florin days; G the florin days.

NUMBER OF VISITORS AT PARIS AND OTHER EXHIBITIONS.

The number of visitors at Paris in 1867 is usually stated as 10,000,000. M. Micheal Chevalier, in the introduction to the jury reports, says that, counting the visits of each holder of a weekly ticket as at least three, the number of 10,000,000 is exceeded. The final official report of the imperial commission gives the total number as 15,000,000, partly by estimate, and states the number of entrances of paying visitors by the turnstiles at the Champ de Mars and at Billoncourt as 9,062,965. This was from the 24th of December, 1866, to the 21st of November, 1867, the visits prior to the opening and after the closing being included. If these are excluded from the statement, the sum would be 8,705,937. To that we may add the number of visitors for the first three days of November, viz, 206,198, giving a total of 8,912,135 paying visitors duly recorded at the turnstiles. In the comparative statement of the number of paying visitors at former exhibitions, which is full of instructive interest, and is appended, the number, including the ticket-holders, is stated as 9,238,967. The tables may be compared with the results of the sale of tickets at Vienna, page —



Comparison of the receipts from visitors at the exhibitions of 1855, 1862, 1867. \*

EXPOSITION OF 1855.

Price of entrance.	Number of ticket or visitors.		Amounts taken in.	
	Partial.	Total.	Partial.	Total.
By subscribers... { at 50 francs ..... { at 25 francs ..... { at 5 francs ..... { at 2 francs ..... By the turnstiles { at 1 franc ..... { at 50 centimes ..... { at 20 centimes .....	3,175 1,668 33,926 95,688 2,103,535 26,322 2,196,795 132,467	} 4,843 {    4,588,733   .....	158,750 00 41,700 00 169,644 00 191,411 00 2,108,391 00 13,163 00 443,319 00 76,107 00	} 200,450    3,002,035   .....
Total.....	.....	4,593,576	.....	3,202,485

EXPOSITION OF 1862.

By subscribers... { at 5 guineas, (134 fr. 50 c.).... { at 3 guineas, (78 fr. 75 c.).... { at 50 shillings, (62 fr. 50 c.).... { at 30 shillings, (37 fr. 50 c.).... { at 10 shillings, (12 fr. 50 c.)....	5,773 17,719 26 919 3,363	} 27,800 {    .....	757,706 00 1,395,371 00 1,625 00 34,4 3 00 42,037 00	} 2,231,202    8,221,450
Admission by the turnstiles, (1 fr. 62 c.).....	.....	5,010,131	.....	.....
Total.....	.....	.....	.....	10,452,652

EXPOSITION OF 1867.

By subscribers... { season tickets at 100 francs .. { season tickets at 60 francs ... { season tickets at 40 francs ... { season tickets at 25 francs ... { season tickets at 20 francs ... { weekly tickets at 6 francs ... { weekly tickets at 4 francs ...	2,285 2,865 78 2 219 83,072 7,167	} 95,688 {       .....	228,500 00 171,900 00 3,120 00 50 00 4,380 00 498,432 00 28,668 00	} 935,050 00       .....
By the turnstiles { at 2 francs 50 centimes..... { at 2 francs ..... { at 1 franc 50 centimes..... { at 1 francs ..... { at 50 centimes .....	4,020 63,069 108,591 8,967,599 .....	} 9,143,279 {    .....	10,050 00 126,138 00 168,886 50 8,967,599 00 563,696 00	} 9,830,369 50    .....
Total.....	.....	9,238,967	.....	10,765,419 50

The aggregate of 15,000,000 of visitors is obtained by computing the number of visits made by the holders of season and complimentary tickets, no separate registry of these having apparently been kept, only the amount received from the sale of the tickets having been recorded. The analysis is appended.

Approximate statement and classification of the total number of visitors to the Paris Exposition of 1867.

1. The number of holders of season tickets was 5,461, and on the supposition that each used his ticket on an average of six times per month, we find the total number of such visits to be.....
- 229,362
2. The number of week tickets was 90,241, and each represented six visits, consequently the sum is.....
- 541,446
3. Visitors entering by the turnstiles.....
- 10,089,051

\* From the report of the imperial commission for the exposition of 1867, p. 539.  
S. Ex. 30——15

4. The number of exhibitors being nearly 50,000, we find upon the supposition that two-fifths only visited the exposition, and that each of them made an average of ten visits a month.....	1, 400, 000
5. Officers of the exposition and workmen.....	2, 340, 141
6. Tickets distributed by the <i>commission d'encouragement</i> ...	400, 000
Total.....	15, 000, 000

The distribution of this number of persons, or of *visits*, properly speaking, among the different modes of reaching the exposition, whether on foot, by rail, omnibus, or otherwise, is interesting, and is considered under the head of transportation.

#### VISITS OF WORKING-MEN.

A feature of the attendance at the exhibition worthy of especial notice is the visits of working-men and employés under the auspices of the governments or their employers. Several countries sent groups of such persons to study their respective arts and trades. Switzerland sent forty workmen each two weeks, this being the duration of the visit of each squad. In Germany associations were formed to defray the expenses of journeymen sent to the exposition. Several of the railway companies assisted their employés to visit the exposition by giving them leave of absence and free passes or tickets over the roads at greatly-reduced rates. In France, when the proposition was made in the assembly to appropriate some \$20,000 to defray the expenses of a body of workmen, a committee reported adversely to the proposition, apparently upon political grounds. Workmen were sent at the expense of the government to the British exposition in 1862, and by the British government to Paris in 1867. One of the fruits of the latter was a volume of reports edited and published under the auspices of the Society of Arts.

The prizes awarded to meritorious foremen are elsewhere mentioned—chapter on awards, &c.

The imperial commission, in 1867, expended over 10,000 francs in sending Chinese workmen home to China.

#### DURATION OF THE EXHIBITION.

Considering the cumulative interest in an exhibition, it is important to prolong one as late in the season as possible, the climate of the locality being duly regarded. It is important, also, not to open before the weather has become settled and favorable.

The exhibition at Vienna, as is well known, was opened to the public on the first day of May, and was closed on the last day of October, being open during a period of six months. The Paris exposition opened on the first day of April and closed on the last day of October, thus covering a period of seven months. In both instances the public were admitted for the first two or three days of November, and at Paris the garden was open for visitors until the 21st of November.

The effect of the early opening at Vienna has already been discussed, but the importance of the subject in reference to the coming centennial justifies further reference.

If the interest of the public in an exhibition is allowed to flag, it is next to impossible to resuscitate it. The exhibitors suffer with the pro-



motors, and the hours until the closing day are anxiously counted. The benefits derived by the exhibitors are greater or less in proportion to the success and the receipts. The outlay is the same whether the exhibition lasts one month or six, but the advantages exhibitors derive are proportional to the time or duration.\* Other conditions being favorable and there being no want of a sufficient population, the longer in the season an exhibition can be kept open the better for all concerned. This is especially true in a great agricultural country, where the farmers must wait until the time of harvest has passed before they can leave their homes for the length of time required to visit the exhibition. It seems to me very desirable, if possible, to prolong the centennial until Thanksgiving day, the national festival, and on the other hand to delay the opening until the 1st of May or until the weather has become favorably mild.

#### NUMBER OF EXHIBITORS.

The number of exhibitors is reckoned at 70,000. Only 24,000 were enumerated in the first edition of the catalogue, which was avowedly incomplete. No official summary was published.

---

\* The imperial commission of 1867 do not fail to direct attention to the disproportion between the expense of making an exhibition and its duration.

THE VIENNA UNIVERSAL EXHIBITION.  
Table showing the numbers of exhibitors in the various groups.

Name of country.		NUMBERS AND TITLES OF GROUPS.																										Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Mining, quarrying, and met- allurgy.		Agriculture, horticulture, and forestry.	Chemical industry.	Substances of food as products of industry.	Textile industry and clothing.	Leather and India-rubber in- dustry.	Metal industry.	Wood industry.	Stone, earthenware, and glass industry.	Small ware and fancy goods.	Paper industry and stationery.	Graphic arts and industrial drawings.	General machinery.	Philosophical and surgical in- struments.	Musical instruments.	The art of war.	The navy.	Civil-engineering, public works, and architecture.	The private dwelling house, its inner arrangements and dec- orations.	The farm-house.	National domestic industry.	Fine-art museums, as applied to industry.	Art applied to religion.	Fine arts of the past.	Contemporaneous fine arts.	Education, teaching, and in- struction.		
Republic of Salvador.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
England.....	4	10	49	27	110	28	79	14	31	8	15	23	181	28	3	70	9	21	1	3	3	3	3	3	3	3	9	664
France.....	101	693	234	497	659	62	83	68	12	13	5	60	259	81	12	11	3	16	1	1	1	5	171	171	171	171	2,505	
Switzerland.....	9	26	32	70	195	23	83	68	12	13	5	60	84	81	12	11	3	16	1	1	1	5	171	171	171	171	2,979	
Italy.....	117	384	266	256	33	6	38	24	11	9	18	25	51	11	8	17	14	17	1	27	2	2	249	249	249	249	1,023	
Sweden.....	26	244	61	54	33	6	38	24	11	9	18	25	51	11	8	17	14	17	1	27	2	2	249	249	249	249	944	
Norway.....	21	24	8	19	12	5	5	5	2	6	5	5	4	2	2	1	12	1	2	2	2	2	2	2	2	2	152	
Denmark.....	4	16	23	46	67	14	22	22	19	19	19	38	30	19	6	2	7	1	1	1	1	115	115	115	115	470		
Netherlands.....	46	46	31	65	56	9	23	11	12	2	4	27	13	15	1	6	3	11	5	1	1	1	1	1	1	1	349	
Belgium.....	20	11	35	32	218	29	38	19	41	2	8	23	58	14	5	9	1	20	1	1	1	1	1	1	1	1	584	
Germany.....	173	432	432	32	796	275	38	19	41	2	8	23	58	14	5	9	1	20	1	1	1	1	1	1	1	1	2,459	
Austria.....	251	443	400	696	1,560	208	620	336	361	344	171	226	40	172	127	22	22	197	15	17	17	52	52	52	52	52	7,290	
Hungary.....	138	767	299	674	663	144	131	239	97	43	58	72	171	54	30	20	43	141	26	617	617	272	272	272	272	272	4,629	
Russia.....	35	162	92	172	206	65	61	30	26	15	34	48	67	32	15	24	19	34	34	3	23	1	7	7	7	7	1,197	
Greece.....	17	85	10	41	66	7	5	5	5	1	2	10	2	1	3	2	4	4	4	4	4	4	4	4	4	4	266	
Turkey.....	222	258	1	3	1	1	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	480	
Persia.....	3	3	1	3	1	1	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	18	
Totals.....	1,139	3,173	1,964	2,653	4,641	876	1,108	775	617	641	506	846	1,380	563	213	124	137	459	52	669	198	1	7	7	7	7	1,272	24,014



In Paris, in 1867, there were 52,000 exhibitors, enumerated by groups as below :

Group I .....	2, 320	Group VI .....	6, 126
Group II .....	4, 265	Group VII.....	9, 351
Group III .....	4, 947	Group VIII .....	1, 349
Group IV .....	8, 306	Group IX .....	791
Group V .....	11, 401	Group X .....	2, 330
Gallery of the History of Labor.....			1, 014

## XVI.—INTERNATIONAL JURY AWARDS.

In the month of June the international jury was organized, in accordance with the provisions of the official programme, No. 76, herewith appended. It will be seen that each country selected its own jurors, and that the number of jurors for each group was proportionate to the number of exhibitors in that group. Provision was made for sectional and group juries, a council of presidents, and for seven classes of awards.

### ORGANIZATION OF THE JURY.

I. *The examination of the objects exhibited.*—The objects exhibited in groups i to xxvi, with the exception of those exhibited in group xxiv, (exposition des amateurs,) will be examined by an international jury.

II. *Additional and temporary exhibitions.*—Special juries will be formed of members of the international jury for the following additional exhibitions, viz: History of inventions, of industry, of prizes, waste materials and their products, representation of the commerce and trade, the infants' pavilion, and female work. For the last-named two exhibitions ladies may also be invited to take part, as experts.

The Cremona instruments exhibition will not be submitted to examination.

Special juries will also be formed in accordance to the respective programmes, by members of the international jury for the temporary exhibitions of horses and cattle, dairy produce, horticulture, cultivation of the vine and of fruits, &c.

III. *Nomination of jurors of the Austro-Hungarian monarchy.*—The jurors of the kingdoms and provinces represented in the Austrian reichsrath will, for one-half, be elected by the exhibitors of each group, and for the other half, appointed. When the number of jurors of a group is uneven, then half of the total number, diminished by none, will be elected.

The voting-tickets must be sent under seal to the chief manager, who will lay them before the executive committee of the sixteenth section of the imperial commission, performing the duty of an elective commission.

The elections will be confirmed by his imperial highness the president of the imperial exhibition commission.

The appointment of jurors will be made by his imperial highness the president of the imperial exhibition commission.

The nomination of jurors for Hungary and its dependencies will be regulated by the royal Hungarian government, respectively, by the exhibition commission appointed by it. The names of the jurors must be made known to the chief manager on or before the 15th April, A. C.

IV. *Nomination of jurors of foreign countries.*—The foreign exhibition commissions are invited to appoint the number of jurors allotted to their country in such a manner as they may consider best, and to send in their list of jurors to the chief manager not later than the 15th April, A. C.

V. *Number of jurors.*—The number of jurors for Austria-Hungary and for each of the foreign countries will be increased in proportion to the number of exhibitors of each state, as shown in the following table.

Each group will therefore contain—

For 10 to 100 exhibitors, one juror.

For 101 to 200 exhibitors, two jurors.

For 201 to 300 exhibitors, three jurors.

For 301 to 400 exhibitors, four jurors, &c.

The exhibiting foreign states are invited to appoint substitutes to fill up the place of absent jurors. Should a juror and his substitute be both hindered from continuing their attendance at the jury meetings, his imperial highness the president of the imperial exhibition commission will, in case of need, fill up the vacancy.



The complete list of jurors will be published by the last of April, 1873.

VI. *Experts*.—The national juries are at liberty to strengthen their number by the addition of members of the jury of other sections, and also to invite the co-operation of other professional men.

These experts must be proposed in a meeting of the sectional jury assembled with the required quorum, by one of its members or the representative of the chief manager, and are elected by absolute majority of votes.

The names of the experts so elected will be published by the chief manager.

VII. *Persons to represent the chief manager at the jury meetings*.—The chief manager will appoint delegates who will be authorized to participate in the transactions of the jury and will have there a deliberative voice. These delegates will also have to procure the subsidiary requirements for the trials and judgments of the jury.

VIII. *Representation of the foreign commissions at the jury meetings*.—The commissioners of foreign states are entitled to participate in the juries transactions with a deliberative voice, either personally or through a delegate of their own.

IX. *Sectional juries*.—The division into groups as published September 16, 1871, will be taken for a basis of the transactions of the jury.

In order to facilitate the professional examination of objects exhibited, the juries of the single groups will be subdivided into sections, according to the list hereto annexed, (see supplement I.)

In judging the working machinery, (group 13, section 2,) as well as plans, models, and arrangements of industrial buildings, and other objects to be examined, from several points of view, those professional men who are judges of the products of the respective machines, manufactories, &c., must be called in from the other sections of the jury to act as voting members.

X. *Organization and task of the juries of sections*.—Each jury of a class, as soon as it is constituted, will elect out of its own members a chairman, a deputy-chairman, and one or more reporters.

Sectional juries are authorized to constitute themselves as soon as they count at least three regular members. In default of this number of members the business of the section will be distributed by the jury of the group to one or more sectional juries.

Every sectional jury has to examine the objects classified in the respective section, and to propose, according to the result of examination, the prize to be awarded.

These propositions are to be submitted to the approval of the jury of the group.

XI. *Organization and task of the juries of groups*.—Every jury of a group comprises all the members of the sections of the respective group.

The chairmen and the two deputy-chairmen of every jury of a group are nominated by his imperial highness the president of the imperial commission.

The reporters are elected by the members of the juries of groups from their own numbers.

The juries of groups will decide on the distribution of the work to be done by the sections which have not yet constituted themselves, and on the propositions of the sectional juries. The same will also propose the diplomas of honor to be awarded.

XII. *Council of presidents*.—The chairmen, deputy chairmen, and reporters of the juries of groups form the council of presidents.

The president and the two vice-presidents of this council will be appointed by his imperial highness the president of the imperial commission. The council of presidents will decide on questions of principle which may be proposed by the juries of groups; they will decide also on the propositions concerning the diploma of honor to be awarded, and will receive the final reports of the juries of groups, which are to be laid before his imperial highness the president of the imperial commission.

XIII. *Functions of the jury*.—The chairman, or in case of his being prevented, the deputy-chairman, will call the meetings, conduct the debates, see that the propositions and resolutions as well as their motives are duly recorded by the secretary in the book of proceedings, which, after due verification, must be laid before the chief manager.

XIV. *Resolutions of the jury*.—To pass valid resolutions, the juries of groups, the sectional juries and the council of presidents must have a quorum of at least half the members besides the president.

The resolutions of the jury will be taken with absolute majority of votes; in case of a division of votes, the president's vote will be decisive.

XV. *Exclusion of the jurors and experts from the competition for prizes*.—Those exhibitors who are commissioned as jurors, renounce fully to the competition for prizes, but experts only for the respective section. This renunciation may be made visible on the objects exposed.

This rule applies also to the partners and managers of the exposing firms.

XVI. *Voluntary renunciation of the exhibitors to the competition for prizes*.—Every exhibitor is free to withdraw his objects exposed from the examination by the jury, but this wish of the exhibitor must be expressly declared on the questionnaire by the words "out of competition." If this declaration, whether the exhibitor desires or not his objects to be examined, is omitted, then it is supposed that he wishes them to be examined.



As for objects which can be classed among several groups or sections, the exhibitors have to denote, on the questionnaires, the group and section wherein they wish to have their objects placed.

XVII. *Examination of the collective exhibitions.*—Collective exhibitions will, in general, be judged as a whole, and are therefore submitted to the regulations mentioned before. However, if one or the other of the participators in such an exhibition should desire to be judged separately, then he must also furnish the jury separately with the necessary statements.

XVIII. *Preparatory work for the transactions of the jury.*—Every exhibitor will receive through the exhibition commission of his country a list of queries, (see supplement ii,) for the purpose to enable him to inform thoroughly the jury about his exhibition. Their own interest must induce the exhibitors to answer the questions in the most complete manner and to submit the same in due time, or else they will risk that, owing to imperfect information, their objects will not be duly appreciated by the jury. The exhibition commissions are requested to transmit the list of questions duly filled up to the chief manager till the 1st of May, 1873, at the latest.

XIX. *Term for the jury's task.*—The international jury will meet on the 16th June, 1873. Their task must be finished by the last day of July.

XX. *Publication of the distinctions awarded.*—The distinctions awarded to exhibitors will be declared at a public ceremonial on the 18th August, 1873, and will be attached to the objects so distinguished from the day following the ceremonial.

XXI. *Diversity of distinctions.*—The jury will award the following distinctions:

1. The diploma of honor of the universal exhibition of 1873 in Vienna.
2. The medal for progress.
3. The medal for merit.
4. The medal for fine arts.
5. The medal for taste.
6. The medal for co-operation.
7. The diploma of merit (equivalent to "honorable mention.")

Each exhibitor can only obtain one distinction of the same class in one of the branches of industry.

XXII. *Rules for the awarding of distinctions.*—In awarding distinctions the following principles will be adhered to:

1. The diploma of honor of the universal exhibition of 1873 in Vienna will bear the character of a peculiar distinction for eminent merits in the domain of science, its applications to the education of the people and the advancement of the intellectual and material welfare of man. This distinction can be awarded exclusively by the council of presidents upon the proposition of a jury of groups.

2. The medal for progress is destined for exhibitors of groups i to xxiii, and of group xxvi, who have furnished proofs of considerable progress over similar products shown at former universal exhibitions, by new inventions, introduction of new materials and contrivances.

3. The medal for merit can be awarded to exhibitors who will support their claims by the goodness and perfection of the work, the extent of production, the opening of new markets, the employment of improved tools and machinery, and the cheapness of the product.

4. The medal for fine-arts is reserved to eminent objects of fine-arts of the 25th group.

5. The medal for taste will be awarded to exhibitors of articles of industry prominently manufactured where the forms and colors are to be appreciated in the first line.

6. The medal for co-operation is destined for individuals who will be designated by the exhibitors as managers of manufactories, foremen, drawers of patterns, model-makers or assistant workmen, for the substantial part they have taken in the excellence of the produce or in the increase of the sale.

7. The diploma of merit can be awarded to exhibitors who have given proofs of meritorious accomplishments, not, however, in a degree to justify the awarding of the medal for progress or for merit.

XXIII. *Central offices of the jury.*—A special office will be formed by the care of the delegates of the chief manager (see § vii) to attend to all work connected with the constitution, transactions, and the whole business of the jury, and the holding in evidence thereof. The office will receive all the documents addressed to the jury, and lay them before it, call the members for meetings, advise the foreign commissions and exhibitors of the imminent examination of their exhibited articles by the jury, keep the proceedings of jury meetings and all its documents in evidence, supply information to all applicants, and procure the required subsidiary appliances.



## ORGANIZATION OF THE JURY FOR THE TEMPORARY CATTLE-SHOW.\*

1. The animals sent to both international temporary cattle-shows will be examined by an international jury.

2. The jurors of the kingdoms and provinces represented in the Austrian reichsrath will be appointed by his imperial highness the president of the imperial exhibition commission.

The nomination of jurors for Hungary and its dependencies will be regulated by the royal Hungarian government respectively by the exhibition commission appointed by it.

3. The foreign exhibition commissions are invited to appoint the number of jurors allotted to their country in such a manner as they may consider best, and to send in the names of their jurors to the chief manager in due time.

4. For each of the two temporary cattle-shows an international jury will be separately convoked.

5. The number of jurors for Austria-Hungary, and for each of the participating foreign countries will be increased in proportion with the number of heads of animals of each state.

According to § 16 of the special programme No. 42, concerning the first temporary cattle-show, to each twenty heads of cattle from Austria-Hungary, and for each ten heads from foreign countries, one juror will be appointed. As for sheep, pigs, goats, &c., one lot will be counted as one head.

6. The prize-jury for horses will be composed, according to the literal text of the programme published in February, 1872, as follows:

“For every number of ten horses of the same state there will be appointed one juror.

“The states exhibiting less than ten, but at least five horses, will be entitled to appoint one prize-juror.

“Chairman of the prize-jury for horses is his excellency Count Grünne, as president of the special horse-exhibition committee.”

7. As to the convocation of the jury for dead and live poultry, dogs, &c., the respective rules will be published hereafter.

8. The exhibiting foreign states are invited to appoint substitutes to fill up the place of absent jurors. Should a juror and his substitute be both hindered from continuing their attendance at the jury-meetings, his imperial highness the president of the imperial exhibition commission will, in case of need, fill up the vacancy.

9. The jury will be at liberty to strengthen their number by the nomination of experts who are not members of the jury.

These experts must be proposed in a meeting of the jury assembled with the required quorum, by one of its members or the representative of the chief manager, and are elected by absolute majority of votes.

10. The chief manager will appoint delegates, who will be authorized to participate in the transactions of the jury, and will have there a deliberative voice.

11. The commissioners of foreign states are entitled to participate in the jury's transactions with a deliberative voice, either personally or through a delegate of their own.

12. The convoked members of the jury will be, if necessary, subdivided into sections, the chairman appointed by his imperial highness the president of the universal exhibition presiding.

13. Each sectional jury, as soon as it is constituted, will elect out of its own members a chairman, a deputy chairman, and one or more reporters.

Sectional juries are authorized to constitute themselves as soon as they count at least five regular members. In default of this number of members the business of the section will be consigned by the president to another section.

Every sectional jury has to examine the objects classified in the respective section, and to propose, according to the result of examination, the prize to be awarded.

These propositions are to be submitted to the approval of the jury assembled in general meeting.

14. The chairman, or, in case of his being prevented, the deputy chairman, will call the meetings, conduct the debates, see that the propositions and resolutions, as well as their motives, are duly recorded by the reporter in the book of proceedings, which, after due verification, must be consigned to the chief manager.

15. To pass valid resolutions, the jury meeting must have a quorum of at least half the members besides the chairman.

The resolutions of the jury will be taken with absolute majority of votes; in case of a division of votes, the chairman's vote will be decisive.

16. Those exhibitors who are commissioned as jurors, renounce fully to the competition for prizes; but experts only for the respective section. This renunciation may be made visible on the objects exposed.

This rule applies also to the clerks or managers of the exposing firms.

\* No. 90. (General programme No. 2, clause x.—From 31st May to 9th June, show for cattle, sheep, pigs, &c.; 18th to 27th September, show for horses, poultry, pigeons, &c.)



17. Every exhibitor is free to withdraw his exposed cattle from the examination by the jury, but this wish of the exhibitor must be expressly declared on the questionnaire by the words "out of competition." If this declaration, that the exhibitor desires his objects not to be examined, is omitted, then it is supposed that he wishes them to be examined.

18. If participators in collective exhibitions should desire their objects to be examined separately, they must state it expressly.

19. The international jury of each of the two temporary shows will meet on the day of their respective beginning, and must have finished their task within two or three days at the latest.

The distinctions awarded to exhibitors will be declared each time close after the examination by the jury and marked on the objects so distinguished.

20. The jury will award the following distinctions :

- (a) The medal for progress,
- (b) The medal for merit.
- (c) The medal for co-operation.
- (d) The diploma of merit.

21. Rules for the awarding of distinctions :

(a) The medal for progress is destined for exhibitors who have furnished proofs of considerable progress over similar products shown at former universal exhibitions.

(b) The medal for merit can be awarded to exhibitors who will support their claims by fine breed, proofs of particular care in keeping, and the great value of the product.

(c) The medal for co-operation is destined for individuals who will be designated by the exhibitors for the substantial part they have taken in the excellence of the produce.

(d) The diploma of merit can be awarded to exhibitors who have given proofs of meritorious accomplishments, not, however, in a degree to justify the awarding of the medal for progress or for merit.

(e) The different races and kinds will compete between themselves.

(f) Prizes in general will be awarded only to good subjects which fulfill perfectly their destination as breeding cattle, or the other purposes for which they are kept. In consequence, the awarded prizes will have an absolute value, and do not only signify that such animal or its whole breed was found eminent among other cattle casually present, but they have the meaning that the animal or the whole breed is perfectly answering the requirements of a good breeding, or to the conditions of the use to which it is destined. Under this rule the consideration of age in the animal is out of question.

(g) The same exhibitor can obtain for one kind of animals only one medal for progress, or one medal for merit.

(h) Exhibitors to whom a medal has been awarded cannot obtain also a diploma of merit for the same kind of animals.

(i) The jury reports on each of the temporary cattle shows will appear separately close after the respective show, and will contain the motives for awarding the prizes.

22. The "central office of the jury" is charged to attend to all work connected with the constitution, transactions, and the whole business of the jury, and the holding in evidence of all its documents. Dr. Joseph Arenstein, chief of the agricultural section of the universal exhibition, is appointed representative of the chief manager. (See sections vii and xxiii of the general organization statute for the international jury. Official document No. 76)

42. Praterstrasse, May, 1873. Vienna.

The president of the imperial commission,

ARCHDUKE RÉGNIER.

The chief manager,

BARON DE SCHWARZ-SENBORN.

#### TARDINESS IN NOMINATING JURORS.

Section iv, providing for the appointment of jurors by each country, stipulates that the list of names should be sent in not later than the 15th of April. This request was rarely complied with to the letter, and the first edition of the official list of the jury, published June 15, instead of in April as intended, is very imperfect. This deficiency in many cases had not been remedied even at the close of the jury's labors. Persons nominated in many instances were not able, or were unwilling, to serve. Edition after edition of the list of jurors was published, each differing from the last, but none complete until the several lists united made a bulky quarto volume.

The fourth edition of the list of names in alphabetical order, published July 20, contains over one thousand names. This list gives the nation-

ality, the functions, the number of the group to which appointed, and the residence in Vienna of each juror.

The first meeting of this jury was a social one, at the invitation of Baron Schwarz, in the spacious halls of the Engineers and Architects Association of Vienna. It was a remarkable assemblage of remarkable men, from all climes, and representing all departments of science and productive industry. They were in most cases selected for their peculiar fitness as experts in the groups to which they were nominated.

The following table shows the number of jurors appointed for each group, including experts and delegates :\*

Group.	No. of jurors.	Group.	No. of jurors.
I.....	35	XIV.....	27
II.....	90	XV.....	19
III.....	50	XVI.....	34
IV.....	93	XVII.....	18
V.....	117	XVIII.....	28
VI.....	25	XIX.....	8
VII.....	52	XX.....	7
VIII.....	42	XXI.....	23
IX.....	37	XXII.....	6
X.....	28	XXIII.....	8
XI.....	26	XXIV.....	0
XII.....	31	XXV.....	53
XIII.....	39	XXVI.....	54

There was, in addition, a special jury on the commerce and trade of the world of fourteen members; one on women's work of six members; and there were thirteen substitutes, and thirteen delegates from the general direction, and two or more secretaries in the general office.

THE DIVISION INTO SECTIONS.

The division of the group juries into sections as provided for in article ix was essential in order to secure just appreciation and to subdivide and facilitate the work. Each group, with a few exceptions, was divided into four or five sections, thus making in all seventy-eight undivided sections and a corresponding number of sections or class-juries.

The whole organization, it will be seen, was very much like that at Paris in 1867.

INTERNATIONAL JURY AT PARIS, 1867.

The international jury at the Paris exposition consisted of six hundred members, selected from each nationality in proportion to the space occupied by the country in the exposition. The members for France were designated by the imperial commission, those from other countries by their respective commissions. The organization consisted of one special jury, ninety four juries of classes, ten juries of groups, and a superior council, as follows :

	Members.
One special jury on new order of recompenses . . . . .	25
One class and group jury on fine arts . . . . .	64
Ninety class-juries, numbering in all . . . . .	483

\* From the list of July 20. The later list contained some other names.



Nine group-juries, formed of the presidents and vice-presidents of classes, 180; 9 presidents and 18 vice-presidents added, 27—207.	27
One superior council, formed of the presidents and vice-presidents of groups, 27; 1 presiding officer added, 1—28 .....	1
Total number of members.....	600

The duties of the ninety-five class-juries were to make the examinations of the objects in their respective classes and to prepare full lists of those exhibitors whom they deemed deserving of an award. The names were to be placed in the order of merit, and the reasons for making the award were to be added.

The lists so prepared were submitted to the group-juries, whose duty it was to revise them and to send them in an approved form to the superior council, which made the definitive decisions and awards. Its decisions were final.

Each class-jury organized by the election of a president and a vice-president, a secretary and a reporter. These presidents and vice-presidents formed the group-juries, and they in turn organized by the selection of a president and two vice-presidents, and these officers constituted the superior council or council of presidents, presided over by one of the vice-presidents of the imperial commission.

#### COMMENCEMENT OF THE JURY-WORK IN VIENNA.

By the 24th of June the international jury had fairly commenced its work. The council of the presidents had met and had taken several important questions into consideration. One was whether it was permissible for commissions of one nationality to select jurors of another, this question being raised upon the nomination of Austrian jurors by the Turkish government. It was decided affirmatively, though some objections were made. The question of the language to be used at the jury-sessions was decided in favor of German and French. It was agreed that members of section-juries might participate in the work of other sections of the same group if they so desired. The relative value of awards was debated, with the conclusion that, with the exception of the diploma of honor, there was no gradation or comparative difference in the awards. At a subsequent session (July 2, 1873) the following explanations of the regulations were adopted and were published for the information of the jurors and the exhibitors.

#### EXPLANATIONS OF THE JURY REGULATIONS.

1. One medal only can be granted to an exhibitor for one and the same object of exhibition.

Consequently an exhibitor who exhibits objects substantially different, belonging to different groups, and which are produced by him in separate establishments, can obtain a medal or diploma of distinction for each such class of production.

2. The medals for progress, medals for merit, medals for art, and medals for taste are perfectly equal in rank and value.

3. The diploma of honor is only awarded for extraordinary merit in science, art, or industry, in education of the people, or in otherwise promoting the welfare of mankind. The number of these diplomas, which can be proposed to the council of the presidents by each group, is not limited beforehand; but the council of presidents will only confer this highest distinction after the perfect fulfillment of the conditions fixed.

4. Distinctions can only be conferred upon single industrial under-

takings or corporate bodies, and not upon the whole industrial community of a country, district, or town.

5. Among co-operators, such persons are also to be considered fit competitors for prizes as have acquired merit in general for the industrial undertaking in question.

6. Only one of the competitors in the same department of an industrial establishment, as for instance for drawing, chemistry, &c., can obtain a prize.

7. The co-operator of a juror is not necessarily excluded from competition, but this juror is not also to take part in the adjudication of the prize.

8. A company of shareholders is only then excluded from competition when the name of a juror appears on its list as present or former member of the firm.

9. Government institutions are not excluded from competition.

10. Distinctions can also be conferred upon those governments which, by considerable collection and accumulation of works of art and industry, encourage, animate, and promote the production of them.

#### DIFFICULTIES OF THE JURY WORK.

Work in earnest had no sooner commenced than the usual difficulties were encountered. One of the first was the want of a complete catalogue by groups and sections, and also a general and corresponding numbering of the objects. There were also some incongruities in the classification, and questions arose as to which jury should examine certain classes of objects. For example, bar-iron and steel unwrought, or considered simply as the result of the extractive processes, was placed by the classification in group VII, but the critical examination of these objects, by the nature of the case, devolved upon the jury of group one, and an understanding to this effect had to be arrived at between the two group-juries.

Among other difficulties or hinderances to the rapid and efficient working of the jury may be mentioned, particularly, the frequent absence of any information whatever regarding interesting objects about which information was eagerly sought by intelligent members of the group-juries. Many objects of real novelty and interest were necessarily passed by or received only meager attention and notice for the want of authentic data regarding them. It must be remembered that with such a vast array of objects before each group-jury, such an amount of labor to be performed in a short time, there is no time to prosecute inquiries or to undertake experimental trials, except, perhaps, in the way of verification or direct comparisons. Moreover, in the absence of owner or an agent the juries do not feel at liberty to make such use and investigation of a machine or object as would be necessary in order to fully ascertain its merits. Each and every exhibitor owes it to himself to be present or to be represented at the time the examination by the jury is made, and, further, to provide beforehand a concise and accurate summary in print of the chief points of novelty or excellence of his exhibit, accompanied by such statistical or other information as the nature of the case will permit, or the interests of the public may require. An exhibitor's statement may, in most cases, be verified or modified by the jurors in a few minutes to suit his views or convictions, and it can be filed away for future and careful scrutiny, becoming a record, in fact, of the examination.

In order to obtain such data from the exhibitors in good season, and at the same time to ascertain what objects would be brought promi-



nently to the notice of the jury, the general direction caused printed forms of questions, called “questionnaires,” to be printed in great numbers, and to be circulated freely among the commissioners and the exhibitors. A specimen copy of one of these questionnaires is annexed and is self-explanatory. It will be seen that information so presented would have the great advantage of being systematically arranged, and in the form best suited to the wants of the jury. The replies were limited to four pages of folio, and it was expected that they would be sent in before the first day of May.

FORM OF THE QUESTIONARY.

Country.....Universal exhibition, 1873, in Vienna.  
Group.....No. of general catalogue.....  
Section.....No. of special catalogue.....

INTERNATIONAL JURY.

*Questionary for the exhibitors of Groups I, III to XVIII, inclusive, and XXVI.*

(For Group II, Agriculture and Forestry, Groups XIX, XX, XXI, XXII, and XXIII, and for the additional and temporary exhibitions, special questionnaires will be issued.)

No.	Questions.	Replies.	Documents.
1	N me and fore-name of the exhibitor.		
2	Firm.		
3	Residence.		
4	Sussinct designation of the exhibited object.		
5	Year in which the business was established.		
6	Year in which the exhibitor took possession of the business.		
7	Manufacturing place, work-shop, places of carrying on the trade.		
8	Number of <div><div>in closed establishments—<div><div>men.</div><div>women.</div></div></div><div>workmen <div>out of doors—<div><div>men.</div><div>women.</div></div></div></div></div>		
9	Number and kind of motive power.		
10	Total amount of the disposable horse-power.		
11	Specification of the working machines and other working apparatus.		
12	Objects the manufacturing of which has been newly imported by the exhibitor into his country.		
13	Contrivances for bettering the availment of the raw, and particularly of the waste, materials.		
14	Improvements introduced in the machines and other working apparatus.		
15	Working and subsidiary material newly introduced.		
16	Improvements in the organization of the labor, for instance, through its more practical distribution.		
17	Special sanitary arrangements in the work-shops.		
18	Humanitary establishments.		
19	Value of the annual average production.		
20	Amount and principal directions of exportation.		

No.	Questions.	Replies.	Documents.
21	Other industrial enterprises of the exhibitor.		
22	Distinetions awarded to the exhibitor on previous univrsal exhibitions.		
23	Other remarks of the exhibitor.		
24	Section into which the exhibitor wishes his objects to be plaeced for examination.		
25	Whether the exhibitor wishes his objects to be examined or not.		
26	Particulars to which the exhibitor desires to eall the special attention of the jury.		

Date.

Signature.


REMARKS.

1. Exhibitors who, till the 1st of May, a. c., will not have the questionnaire, duly filled up, delivered to the chief manager, through their respective comuission, have to ascribe it to themselves if, for want of the necessary documents, their objects of exhibition will not be valued eorrespondingly by the jury.

2. Exhibitors have to declare whether they will or not submit their products to the judgment of the jury. In the latter case, this eireninstancee is to be made visible on the questionnaire which will be delivered to them by the words, "out of eompetition."

3. As for those objects which can be plaeced into several groups or sections, the exhibitors have to mark, on the questionnaire transmitted to them, the section into which they want their objects to be classified.

4. Should the space contained in the rubrics prove insufficient, the exhibitors are desired to write the respective statements on separate sheets, on which the number of the question is to be marked. This supplement is also to be pointed out on the questionnaire in the rubric, "Documents."

 Size of the questionnaire : folio, four pages.

Beilage III. Formulare des Fragebogens.

Land....

Weltausstellung 1873 in Wien

Section.....

General-Katalogs-Nummer.....

Special-Katalogs-Nummer.....

INTERNATIONALE JURY.

Fragebogen für die Aussteller der Gruppe II.

Nr.	Fragepunkte.	Antworten.
1	Vor- und Zuname des Anstellers	
2	Charakter	
3	Wohnort	
4	Name des Besitzthums	
5	Eingeführte Verbesserungen: <div><div>a) in der Fruehtfolge ;</div><div>b) bei den Maschinen und Geräthen ;</div><div>c) in der Ausnützung der Rohstoffe ;</div><div>d) in der Verwerthung der Abfälle ;</div><div>e) im Forstbetriebe ;</div><div>f) im Wiesenbau ;</div><div>g) in der Viehzucht ;</div><div>h) sonstige Verbesserungen ;</div></div>	
6	Landwirthschaftlich-industrielle Unternehmungen des Ausstellers	
7	Auszeichnungen bei früheren Weltausstellungen	
8	Anderweitige Bemerkungen des Ausstellers	
9	Section in welche der Anssteller seine Objecte für die Beurtheilung eingereicht wünscht	
10	Wunsch des Ausstellers beurtheilt zu werden oder nicht	



## BEMERKUNGEN.

1. Jene Aussteller, welche den ausgefüllten Fragebogen nicht bis 1. Mai dem General-Director im Wege der betreffenden Ausstellungs-Commission vorlegen, haben es sich selbst zuzuschreiben, wenn ihre Ausstellungs-Objecte wegen mangelhafter Information die entsprechende Würdigung durch die Jury nicht finden.

2. Die Aussteller haben die ausdrückliche Erklärung abzugeben, ob sie ihre Leistungen der Beurtheilung unterwerfen wollen oder nicht. Im letzten Falle ist dieser Umstand auf dem Fragebogen durch die Bezeichnung "ausser Preisbewerbung" ersichtlich zu machen.

3. Die Aussteller haben hinsichtlich solcher Objecte, welche in mehrere Gruppen oder Sectionen eingereiht werden können, auf den zugestellten Fragebögen die Section zu bezeichnen, in welche sie ihre Objecte für die Beurtheilung eingereiht zu sehen wünschen.

4. Die Aussteller werden ersucht, im Falle der in den Rubriken gegebene Raum nicht ausreicht, die betreffenden Daten auf besonderen Bögen mit Angabe der Zahl des Fragepunktes beizuschliessen und dies auf diesem Fragebogen ersichtlich zu machen.

But many of the exhibitors neglected or paid very little attention to these questionnaires, and many, perhaps, never saw them until it was too late.

The confused and heterogenous arrangement of the exhibition was also a great hinderance and difficulty. It required great effort to find the objects, and when found, comparison was impossible.

These adverse conditions, together with the nature of the prizes made the work of the Vienna jury differ radically from that of the international jury at Paris in 1867. There the prizes were graded to suit degrees of merit. They were comparative, and the judgment of the jury was based upon a careful discrimination between objects of the same class or kind from different countries. In Vienna comparisons were not the basis of the awards; each exhibit stood by itself. It was judged upon its merits. Merit justified the award of a medal for merit, good taste of a medal for good taste, progress of a medal for progress, and so on, but either or all at the option of the jury upon the examination of that single exhibit, not as the result of comparisons. The phrase "the highest prize," in regard to the Vienna awards loses its significance, and is a misnomer, though undoubtedly most of the recipients of awards prefer the medal for progress to that for merit.

This absence of the element of comparison and of grades of awards corresponding to degrees of merit greatly lessened the labor and responsibility of the jury. Probably the work could not have been done on the basis of that at Paris without a corresponding systematic arrangement.

## SPECIAL JURIES.

Special juries were organized for the flower exhibitions, the cattle show, and the horse exhibition. For the flower exhibitions one juror was appointed for each twenty exhibitors.

## CLOSE OF THE JURY WORK.

By the the active work of the group juries had nearly ceased, and preparations were made for the official announcement of the awards on the 18th of August. There were many reclamations, and great pressure was brought to bear in favor of the appointment of a supplemental jury to revise some of the work and to examine exhibits which had been overlooked. But nothing was done, it being impossible to satisfy all, and the work of the jury, as reported, was accepted as final.

The announcement was made, as intended, on the 18th of August,

without much ceremony, and fortunate recipients of awards immediately telegraphed the fact in all directions and advertised it to the world.

At no previous exhibition were the awards so generally bestowed. At Paris with 52,200 exhibitors there were 19,776 awards.\* In Vienna, with about 70,000 exhibitors, there were no less than 26,002 awards, or over 33 per cent. of the number of exhibitors.

These 26,002 distinctions were distributed as follows :†

421 diplomas of honor.

3,024 medals for progress.

10,465 diplomas of approval, (*i. e.* honorable mention.)

8,800 medals of merit.

326 medals for good taste.

978 fine arts medals, and

1,988 medals awarded to workmen, &c.

Classified as to countries, the distribution was :

1. Austria.....	5,991	17. Roumania.....	238
2. Germany.....	5,066	18. Japan.....	217
3. France.....	3,142	19. Brazil.....	202
4. Italy.....	1,908	20. Greece.....	183
5. Hungary.....	1,604	21. China.....	118
6. Spain.....	1,157	22. Egypt.....	75
7. England.....	1,156	23. South America.....	44
8. Russia.....	1,018	24. Persia.....	29
9. Switzerland.....	723	25. Morocco ..	20
10. Belgium.....	612	26. Madagascar, &c.....	10
11. Sweden and Norway...	534	27. Monaco.....	9
12. Turkey.....	470	28. Sandwich Islands.....	8
13. United States.....	441	29. Mexico.....	1
14. Portugal.....	431	30. Siam.....	1
15. Denmark.....	309	31. Turkestan.....	1
16. Holland.....	284		

\* These 19,776 awards consisted of 83 grand prizes, 1,176 gold medals, 4,455 silver medals, 7,434 bronze medals, and 6,247 honorable mentions—diplomas. Medals were also struck for collaborators, and for those who, by the regulations, were placed *hors concours*.

† In the analysis of the nature and distribution of the awards I have availed of the admirable tabular presentation of the facts given in engineering, September 19, 1873.



AWARDS.

Table showing the number of awards of each class to the exhibitors from each of the different countries.

In detail the different countries received.		Diplomas of honor.	Medals of progress.	Diplomas of approval.	Medals of merit.	Medals for good taste.	Fine arts medals.	Co-operator medals.
1	Austria .....	66	633	2,520	1,977	121	124	550
2	Germany .....	100	630	1,951	1,820	41	200	324
3	France .....	83	547	913	940	43	240	376
4	Italy .....	19	163	867	650	18	97	94
5	Hungary .....	15	101	816	516	8	25	123
6	Spain .....	8	117	593	374	7	18	40
7	England .....	28	169	432	420	13	49	45
8	Russia .....	20	124	281	362	13	47	71
9	Switzerland .....	22	92	258	257	3	33	58
10	Belgium .....	20	86	155	183	6	90	72
11	Sweden and Norway .....	9	57	236	181	.....	15	31
12	Turkey .....	2	30	227	174	18	.....	19
13	United States .....	9	72	154	177	5	16	9
14	Portugal .....	1	36	218	144	.....	.....	32
15	Denmark .....	2	27	138	100	9	8	25
16	Holland .....	6	39	91	109	3	25	11
17	Roumania .....	1	9	145	68	4	.....	11
18	Japan .....	4	40	72	92	1	.....	8
19	Brazil .....	2	25	77	85	1	.....	9
20	Greece .....	1	7	114	47	1	4	9
21	China .....	2	10	28	47	3	.....	28
22	Egypt .....	1	6	16	33	5	1	13
23	South America .....	.....	1	33	9	.....	.....	1
24	Persia .....	.....	2	8	14	.....	.....	5
25	Morocco .....	.....	1	7	8	1	.....	3
26	Madagascar, &c. ....	.....	.....	7	3	.....	.....	.....
27	Monaco .....	.....	.....	2	3	2	.....	2
28	Sandwich Islands .....	.....	.....	4	3	.....	.....	1
29	Mexico .....	.....	.....	.....	1	.....	.....	.....
30	Siam .....	.....	.....	1	.....	.....	.....	.....
31	Turkestan .....	.....	.....	1	.....	.....	.....	.....

Table showing the number of the awards made in each of the groups.

Group.	No. of awards.	Group.	No. of awards.
I .....	557	XV .....	314
II .....	2,504	XVI .....	251
III .....	1,465	XVII .....	232
IV .....	3,555	XVIII .....	599
V .....	4,511	XIX .....	74
VI .....	584	XX .....	24
VII .....	1,755	XXI .....	893
VIII .....	741	XXII .....	11
IX .....	841	XXIII .....	120
X .....	1,001	XXIV .....	.....
XI .....	471	XXV .....	.....
XII .....	994	XXVI .....	1,340
XIII .....	1,280	Additional exhibits .....	302
XIV .....	605		

Awards in the art department.

In the distribution of the fine arts medals, the different countries rank as follows :

France .....	240	Hungary .....	25
Germany .....	200	Holland .....	25
Austria .....	124	Spain .....	18
Italy .....	97	North America .....	16
Belgium .....	90	Sweden and Norway .....	15
Great Britain .....	49	Denmark .....	8
Russia .....	47	Greece .....	4
Switzerland .....	33	Egypt .....	1

*Diplomas of honor.*

Finally, the statistics of the diplomas of honor, according to the number of inhabitants of the different European countries, are :

	Inhabitants.
Russia, 1 diploma of honor in every .....	3, 550, 000
Italy, 1 diploma of honor in every .....	1, 405, 000
Great Britain, 1 diploma of honor in every .....	1, 222, 000
Denmark, 1 diploma of honor in every .....	900, 000
Sweden and Norway, 1 diploma of honor in every .....	655, 000
Holland, 1 diploma of honor in every .....	650, 000
France, 1 diploma of honor in every .....	462, 000
Austro-Hungary, 1 diploma of honor in every .....	443, 000
Germany, 1 diploma of honor in every .....	410, 000
Belgium, 1 diploma of honor in every .....	250, 000
Switzerland, 1 diploma of honor in every .....	108, 000

Many persons think that this lavish distribution of distinctions greatly lessens their value in such case. This may be true, but on the other hand it is surprising to see how completely they have been absorbed and utilized by the industrial world. And notwithstanding the great number, there were many disappointed and dissatisfied exhibitors.

The difficulties and imperfections in the work of juries at each successive great exhibition have led many persons, including some familiar with the workings of such enterprises, to advocate the abolition of the whole jury and award system at future exhibitions. There is no question that great trouble, vexation, and expense on all sides would be saved by such a course. There would not be any jealousies, disappointments, or reclamations, and the management would be relieved of a most difficult and embarrassing feature. But would the popularity and usefulness of exhibitions be promoted by such a course?

Before going to Vienna, I was in favor of a modification of the usual plan by substituting for medals and diplomas very complete reports upon each class by competent and independent experts, so that the written and published opinions of such authors indorsed by his co-laborers, organized perhaps as a jury, would be to an intelligent public a better and a more accurate evidence of merit than any medal. At the same time a medal uniform in style and quality could be given to all worthy exhibitors as an evidence of their participation in the exhibition. But this plan is open to many objections, not the least of which is a possible abuse of the power which would necessarily be centered in individuals.

A more extended consideration and experience of the subject at Vienna has led me to change my views and to the conviction that the prize-system cannot be abandoned without destroying with it one great element of the success of industrial exhibitions. Rather than uproot the system let it be perfected. It has found its support hitherto in a deeply-rooted want of the producing and trading classes. The evidences on every side of the commercial value of *any* award, by whatever name it is called, provided it recognizes excellence or merit in some form, are patent to almost every observing person. It is certain that to most exhibitors awards have a considerable money-value in consequence of the favorable effect upon the market for their products. In most cases the reception of an award fully repays the exhibitor for all his trouble and expense, and it is the possibility of gaining such a distinction that justifies the venture in exhibiting. It is, in fact, a great stimulus to effort and to excellence, and is the great incentive to a liberal participation in exhibitions.



Upon this subject Hon. Mr. Beckwith, the United States commissioner-general to the Paris exposition of 1867, and now one of the members of the commission, writes :

Experience on former occasions has in the main justified the awards of the juries, and they have served not only to confirm established reputations but to bring into prominent notice the excellent products of thousands of skillful and worthy producers, who labored previously in comparative obscurity, and whose improved fortunes date from those periods. But the benefits resulting from this are not limited to the successful exhibitors. They are naturally stimulated to renewed efforts to maintain their new positions, which quickens their invention, improves their products, and raises their own standard, while their rivals and competitors, who if not equally skillful are less lucky, are thereby compelled to work up to this higher level. A new spirit is thus breathed into every department of industry, and the benefits of increased production, improved qualities and varieties, and diminished cost become universal.\*

Awards carry weight and value in the eyes both of the recipients and the public, somewhat in proportion to the extent and general reputation of the exhibition at which they are given. In fact the reputation of the exhibition endows them with their value. Anything from a great exhibition of world-wide fame, like those of London, Paris, and Vienna, attracts attention, and invests the products with a part, at least, of the importance of the exhibition itself. Again, each new universal, international exhibition is a new starting-point in the world's industry, and machines or products honored in the competition are heralded and recorded in industrial literature. There is thus a great advertising advantage to which the enterprising manufacturer is by no means blind. Again, the reception of an award affords the basis for advertising in a fresh and attractive form. The announcement is itself a great advertisement. Enterprising exhibitors do not fail to appreciate this advantage, and they magnify it by sending telegrams to their agents and correspondents.

Awards, as utilized by producers, partake of the nature of trademarks. The image of the medal is commonly stamped or printed on the labels and circulars of the recipient or manufacturer. It serves to attract and command attention, and in some markets, as notably those of eastern nations, may serve to identify the goods of producers of established reputation.

When we consider the vast range of modern industry and the ramifications of trade over the world, we may cease to wonder how it is that so many thousand awards may be bestowed without destroying their separate value and significance.

For the various reasons stated I advocate the adoption of a well-devised system of awards for the Centennial Exhibition, and I venture to suggest some modifications of former systems.

1. *In respect of the organization of a jury.*—The members should be selected as early as possible, even before the opening of the exhibition, and their acceptance of the duties should be secured so that their prompt attendance may be expected.

There should be more time for their labors, and their deliberations should be frequent.

The members who attend the sessions and discharge their duties should receive in some form an acknowledgment of their services, and at least be relieved of all expenses incident to the work.

2. *The awards.*—There should be but one kind of medal, either of considerable value and sparingly bestowed, or of bronze characterized by artistic excellence rather than intrinsic value. There are several objec-

---

\* Report of Commissioner-General Beckwith, vol. 1 of Paris Exposition Reports, General Survey, p. 8.



tions to the use of gold. If made large enough to receive the impress of a good commemorative design, the cost for so large a number as would be required would be too great, say 20,000 medals at \$50 each, \$1,000,000, and the gold would practically be locked up. There would be the constant danger of losing such a medal by theft if freely shown, its very nature thus militating against its chief use, and there would be the temptation to melt them up and convert them into money, thus causing their gradual disappearance.

Aluminium or silver might be used, but copper "bronze" is no doubt the best material for the purpose. As the medals are not exposed to wear, oxidation might be entirely prevented by covering the surface with pure gold in the galvanic bath to any desired thickness.

A departure from the usual circular form in order to especially mark the medals of the exhibition is worthy of consideration, but if the design is large enough to be readily recognized, there would be less reason for an innovation in this regard.

3. *Provision for full reports.*—Careful and complete arrangements should be made in advance for thorough reports upon each group under the sanction of the jury. These reports should discuss the relative merits of the various exhibits, and present, as nearly as possible, a true picture of the condition of the arts and industries of the world at the time.

#### HOSPITALITIES AND ATTENTIONS TO THE JURY.

The international jury was the recipient of many and varied attentions from the general direction and from the government. These were extended not only to the jury collectively, but to the individual members. Some only of the more marked and general hospitalities will be mentioned. Excursions were organized to the places in the vicinity of Vienna of greatest interest to the members; notably among these were the visit to the Semmering upon the Southern Railway, one of the most imposing of engineering works.\* Two long special trains conveyed the members of the jury, with their wives, and the invited guests. At Murzzuschlag a generous banquet was provided, seats for all being found at long tables spread in two large freight-houses, the walls of which were completely covered with evergreens from the adjoining alpine slopes. Music, oratory, and champagne contributed to the general good humor.

The excursion down the Danube to Pesth, July 26, required three days. Invitations from the citizens and authorities of Pesth† were issued to each member of the jury and his family. The party embarked in the morning upon the steamers of the Danube Steam-Navigation Company and reached Pesth in the evening. Another steamer from Pesth with the committee of reception and guests ascended the river to meet the jury and led the way to the landing-place. Immense crowds lined the way to the hotels and viva upon viva showed the enthusiasm of the people. Two days were spent in visiting the chief places of interest in and about Pesth and Ofen.‡ The programme of the excursion is annexed. The members were also received in the evening at the palace by the minister resident, Joseph de Szlavy.

\* The portion of this railway which mounts and passes the Semmering is about twenty-five miles in length, and cost upward of \$7,500,000. The summit of the pass is about 2,900 feet above the sea.

† "The municipality of the Hungarian metropolis—Budapesth."

‡ Budapest is now a flourishing and rapidly growing city with over 200,000 inhabitants. The national museum contains a superb collection of antiquities and of minerals.



*Programme for the excursion of the international jury of the Vienna Exhibition to Budapest.*

On the 26th of July, 1873, at 7 o'clock a. m., departure from Vienna by a special steamboat from the ordinary landing-place. Coming on board, the members will be welcomed by the deputation of the town of Pesth. Table d'hôte on board the steamer at 2 o'clock, p. m. Arrival at Budapest between 7 and 8 o'clock in the evening, where the party will be received by the representatives of the municipality. In the evening there will be a reception in the grand saloon of the hotel Hungaria, where the members will be introduced to one another.

II. On the 27th of July, at 8 a. m., assembly in the park of the redoute buildings, a visit to the bath Ráczfürdő by carriage, then into the fortress and royal palace gardens, the Albrecht road, the iron factory of Ganz. Near the bath Császarfurdo (Kaiserbad) a special steamer will receive the company and take them to Ó-Buda for inspection of the docks. From the latter place the steamer will proceed to the Margaret Island. Visit the new bath establishment, promenade through the park of the island. Luncheon at 12 o'clock in the great restaurant. At 2 o'clock p. m. return from the island. In passing, the works for the construction of the new Danube bridge, the Danube regulation, and the new custom-house will be inspected. Landing at the old Soroksár custom-house. Visit by carriage the new slaughter-house and from there return to the hotel. At 6 o'clock p. m. banquet in the great hall of the Redoute. At 9 o'clock in the evening procession of the fire-brigade with music before the Redoute buildings.

III. On the 28th of July at 8 a. m. members are requested to meet at the park opposite the Redoute buildings and visit from there the palace of the Hungarian Academy of Science, the picture gallery, and the national museum. Excursion to the town-park by tramway. At 12 o'clock luncheon in the zoölogical gardens. At 2 o'clock excursion by carriage to Köbánya, (Steinbruch,) inspection of the water-works, the first Hungarian establishment for fattening pigs. Return to town. Dinner at 6 o'clock p. m. in the hotel Europe. Return to Vienna by railway (Staatsbahn) at 9.30 p. m.

Throughout the whole visit the whole party individually and collectively were the recipients of the most generous and elegant hospitality, and returned to Vienna by rail deeply impressed by the heartiness of their reception, and the generous sympathies of the Hungarians with industrial and social progress.

The juries upon agriculture, forestry, &c., made special excursions to the estates in the vicinity and were most generously entertained by the proprietors.

## ACCOMODATIONS FOR THE JURY.

The jury pavilion, one of the most ornate and attractive of the buildings about the industrial palace, and erected at a cost of \$70,706, was designed especially for the seances of the international jury. It had one main auditorium in the center and a series of apartments on either side. This building was the central point for the jury meetings, but was soon found to be too small to accommodate all of the sections, and much of the business was transacted elsewhere. A special post-office was established there, so that the members could receive their letters and interchange communications without delay. Several secretaries and assistants in attendance gave information to members as required and were otherwise occupied with the clerical work incident to the operations of the jury. The time and place of the meeting of each group-jury and of each section was conspicuously posted upon tablets in the walls fitted for the purpose.

Catalogues by groups were provided for each member and efforts were made to facilitate their work in every way.

*Official list of the awards.*

The official list of the awards was printed as soon as possible in the German language, and forms a quarto volume of more than 500 pages. The first edition being found to be incomplete, and in some particulars inaccurate, a new one was preparing when I left, and would soon be issued.



The United States commissioner, Mr. Garrettson, had a special list printed of the names of Americans to whom awards were made. This also required a second edition, to avoid and correct the errors of the first. The second edition contains names or awards, distributed as follows:

Diplomas of honor .....	9
Medals for progress .....	70
Medals for merit .....	180
Medals for fine arts .....	2
Medals for good taste .....	5
Medals for co-operators .....	23
Diplomas of merit or honorable mention .....	141

#### PRIZE-COMPETITION FOR MERITORIOUS FOREMEN AND WORKMEN.

The society of arts and manufactures in Vienna decided to distribute on the occasion of the Vienna universal exhibition of 1873 a number of medals to deserving foremen of foreign countries represented at the exhibition.

The particulars are contained in the following programme,\* published by the society of arts and manufactures in Vienna:

The specimens of technical skill exhibited at the earlier London and Paris world's exhibitions were almost exclusively rewarded by distinctions, and it was in this sense that the respective manufacturers, together with superior co-operators so recommended by them, were also rewarded with premiums.

The system of distributing prizes at the Paris exhibition of 1867 has been improved inasmuch as, in addition to the properly so-called industrial productions, there was a separate division of group X for the exhibition of all objects appearing qualified to improve the material and moral condition of the people, and especially the welfare of the working class.

At the same time a high prize has been offered the person to whom a special jury would adjudicate the highest merits.

Thus, the moral good done by masters to their workmen was acknowledged, but the merits of workmen toward their masters, deserving just as much consideration, were not taken into account.

This important matter, which has been surprisingly neglected at all previous exhibitions, attracted as far back as the year 1840 the attention of one of the founders of the society of arts and manufactures in Vienna.

This was Mr. Michael Spoerlin, an eminent manufacturer, who in the said year proposed to the society to offer premiums to well-deserving foremen and head-workmen who used to substitute the foremen in some industrial branches, which was agreed to, and in consequence the periodical publication of prizes was resolved upon and has been continued ever since without interruption.

"Besides technical skill," said Mr. Spoerlin in support of his motion, "there is another merit of workmen which never comes to the knowledge of either the Lower-Austrian Industrial Society or the public administration, and which cannot, therefore, be rewarded; it is a merit which exists quietly and unostentatiously inside of our workshops, but is of essential value for the prosperity of any industrial enterprise; it is that merit which upright and honest foremen acquire through their faith-

---

\* And, also, by the general direction. Programme No. 69.



fulness and attachment. Such assiduous foremen who, selected from the most clever and judicious workmen, fulfill their arduous duty with an untiring zeal, who care for the prosperity of the establishment and the well-being of their master, and are constant mediators between master and workman, are most assuredly pre-eminently worthy of public acknowledgment and reward."

Faithful service for many years, dutiful and zealous attention to the interests of the principal, energetic though humane guidance of their subordinate fellow-workmen, a strictly moral conduct of life, a striving for higher accomplishments, and successful teaching of the apprentices intrusted to their care, these qualifications combined will entitle foremen and head-workmen to enter into competition for the prizes published by the society of arts and manufactures in Vienna.

Seven such prize-competitions have been held till now by the said society, mostly in regular intervals of five years each, the last of which was held in the year 1870. Such a great result was obtained that the society had the opportunity to distribute their great silver medal in 267 copies to as many veterans of industry in nearly all its branches and all the crown-lands of the Austrian empire.

While on the one hand such a visible sign of honorable acknowledgment given by a society for the advancement of industry, comprising its first men as well as men of science, was to fill the rewarded with just pride and self-consciousness, it gave on the other hand a great spur for emulation to their fellow-workmen, which did not lose its effect.

More than thirty years experience has proved repeatedly and to full evidence the powerful influence which the prize-competitions of the society of arts and manufactures in Vienna have exercised in the midst of our fellow-workmen.

At this moment, when the industrial dominions of the whole world are preparing to take a part in the Vienna universal exhibition of next year, whence they hope to take home well-deserved rewards for their substantial and successful working, the society of arts and manufactures in Vienna also endeavor to contribute their modest part for the recognition of industrial merits.

Besides the prize-competition for foremen and head-workmen of the Austrian monarchy, which is now published within a shorter period than heretofore, the society intend, corresponding to the international character of the universal exhibition, to devote a part of their foremen's medals to the industrial people coming to Vienna as guests. These medals are intended, according to the spirit of the prize-foundation as sketched herebefore, to be awarded to well-deserving persons of foreign countries, upon the proposal made by the exhibition commissions of the respective countries.

On looking back at the results of thirty years' work, the Society of Arts and Manufactures in Vienna feel authorized to believe that the seed they have sown in behalf of the recognition of the moral merits of workmen have produced a rich harvest. They hope that the foreign industrial circles will not refuse to acknowledge their endeavors, and herewith invite them to advance by all means, in their own interest, the prize-competition of the year 1873.

The distribution of these prizes took place on the 27th of September, in the beautiful hall of the "Gewerbeverein," in the presence of the Archduke Charles Louis, the Archduke Rainer, several ministers of state, and Baron Schwarz, the director-general of the exhibition.

One hundred and thirty-four great silver medals were awarded, with



a diploma, to Austrian and Hungarian foremen, and one hundred were reserved for foreigners, distributed among countries as follows :

United States of America.....	5	Holland .....	4
Great Britain.....	10	Portugal .....	5
France .....	18	Denmark.....	4
Germany .....	13	Sweden .....	7
Italy .....	9	Russia .....	5
Switzerland .....	5	Greece .....	3
Belgium .....	5		

The moral effects of such awards are very great in Europe, and the subject deserves our earnest attention in arranging the system for 1876

COMPETITION FOR THE PRODUCTION OF PRIZE-MEDALS.

The artists of all nations were invited to compete in designs for the five prize-medals. This general competition was announced as early as the 30th of November, 1871, by the programme No. 11, in which the conditions of the competition were stated in full. The designs were executed in relievo in wax, plaster of Paris, or in sulphur, and were to be sent in before the 1st day of April, 1872. The selections were made by a jury of twelve members. The best models were awarded a prize of fifty Austrian ducats.

XVII.—INTERNATIONAL CONGRESSES.

There can hardly be a more fitting opportunity for the intelligent discussion of industrial questions of international interest than is afforded by the successive great exhibitions. It was, therefore, a wise provision on the part of the general direction to arrange for a succession of conferences and international congresses under the official sanction and patronage of the imperial commission for the discussion of important matters to which either the exhibition itself gave rise or which might be specially selected as subjects of international interest.

The general programme, No. XI, gave the chief outlines of the plan as follows :

More especially, there will be international congresses of men of science, teachers and artists, physicians, directors of museums of fine art applied to industry, teachers of drawing, architects, engineers, representatives of chambers of commerce, economists acquainted with the questions relative to banking and insurance, of agriculturists, foresters, mining engineers, &c.

Among the questions subject to such discussion will be the following:

The question of intellectual property, of improvement of public taste, of the promotion and diffusion of arts of design, on economy of transport, on obtaining the highest efficiency of machines, on the extension and development of forest, statistics on reducing the price of food, whether by increased production, better organization of markets, reformed cookery, or new method of preserving food, on the nourishment and early rearing of an infant, on early healthful training and gymnastics, on the exertions of our time in regard to the curing of deformed children, on the education of women and improvement of her social condition.

The following is the calendar of the conferences and congresses :

CALENDAR OF INTERNATIONAL CONGRESSES.

- 1873, June 16, 17, 18, 19, 20, 21. International congress of brewers.
- 1873, July 7, 8, 9, 10, 11, 12. International congress for discussing the question of a uniform numbering of yarn.
- 1873, August 3, 4, 5, 6, 7, 8. International congress of teachers and managers of institutions for the blind.



- 1873, August 3, 4, 5. International congress for the question of patents.  
 1873, August 11, 12, 13, 14. International congress of national economists.  
 1873, August 19, 22. International flax-trade congress.  
 1873, August 18, 21. International linen manufacturers congress respecting the consideration of the following: On the 18th, spinning and weaving; on the 21st, bleaching, dyeing, and dressing.  
 1873, August 24, 25, 26, 27. International meeting of miners and metallurgists.  
 1873, September 26 to October 4. International medical congress.  
 International congress for discussing the question of paper currency and stock-values.  
 International agriculturists' and foresters' congress.  
 International congress for devising means for the protection of birds.

Each congress in succession had its special organization, and series of publications, announcements, and festivities. The congress of brewers was well attended, and the results were satisfactory to those specially interested. There were numerous papers read, of technical interest, and among the excursions there was one by a special train to the Schwechat brewery.

The preparatory committee of the congress for discussing the question of a uniform numbering of yarn, submitted a series of propositions which were published in full in the programme, No. 77, annexed.

#### NO. 77. UNIVERSAL EXHIBITION 1873 IN VIENNA.

*International congress for discussing the question of a uniform numbering of yarn.*

##### PROPOSITIONS.

In accordance with programme No. 61, dated July 10, 1872, paragraph 4, the preparatory committee suggests that congress should discuss and resolve upon the following:

1. The present system of numbering yarn renders the traffic in web difficult. Considering that yarn has become an article of international traffic, improved upon in every commercial treaty, new railway enterprises, telegraph constructions, and universal exhibitions, it is in the highest degree desirable that the removal of every observable hinderance should be strenuously supported.

The present appears to be the proper period for this, as the use of the metrical weights and measures system, adopted already by many states, has lately been extended to an industrial territory comprising seventy millions of inhabitants.

2. It appears that, if the choice of the standard of weights and measures is made correspondingly with the character of web, it is possible to introduce the numbering of all webs upon the same principle.

3. The principle of this uniform numbering recommends itself in the following way: The number will be determined by the number of meters going to a gram, a decagram, a hectogram, or a kilogram.

In considering that the standards of yarn in trade are independent of the principle of numbering, and that, in establishing the standards, technical moments are to be considered, the various webs will be, as heretofore, dealt in partly by length and partly by weight.

4. With respect to the reel-length the following is to be recommended:

a. For flax and jute,  $2\frac{1}{2}$  meters.

b. For combing, carding, silk and cotton yarn,  $1\frac{1}{4}$  meters.

5. The mechanical alterations on the machinery consequent on the introduction of this new system of numbering are very trifling. They comprise the adoption of new sorting balances, and a new reel. The cost of these, as well as labor, are nothing in proportion to the immense advantage to be derived by the change.

6. In order that the new system may be effectually carried out, the resolutions of the congress should be circulated through the press, the co-operation of industrial societies, halls of commerce, markets, chambers of commerce, mercantile communities and associations, its quotation in usances, and, lastly, the introduction of legal measures secured. The most beneficial means to be employed, however, is the voluntary introduction by the spinners themselves.

At least seven members will be selected from the congress, who will form an international committee, whose members will meet at least once a year from 1874, in order to ascertain what has already been performed, and further to provide measures which may appear desirable.



## MOTIVES.

*Of question 1.*

There are works written giving an account of the coinage, weights, and measures system of the several States, and the same works generally devote a large space to the numbering of yarn; there are also special books treating upon this matter, as the subject is too extensive to be treated in a restricted form, especially if every kind of yarn is considered. Weaving schools, if they treat only a part of the rich material, must lose a great deal of time in teaching. Very few manufacturers or merchants are capable of completely controlling the subject, for only a superficial observation will illustrate the long row of figures which have to be dealt with. In cotton yarn, for instance, there exist two systems of numbering. England has, for a uniform weight, the English pound, and length 840 yards. France has, for uniform weight, the  $\frac{1}{2}$  kilogram, and length 1,000 meters; (hanks.) In combing-wool, Germany always calculates 840 yards to an old Berlin pound; England, 560 yards to the English pound; France 720 meters to 500 grams. For flax-yarn the bases of fineness are: 1,152,000 Silesian yards to 2,400 Prussian pounds; 60,000 yards to 200 English pounds; 36,000 yards to 540 kilograms. In carding-wool the standard lengths are: 1,493,624 and 3,600 meters, 800 and 1,200 Saxon, 2,200 and 2,240 Berlin ells, 1,760 Vienna ells, and the standards of weight the English, old Prussian, Saxon, customs and Vienna pound. Floss-silk is wound up according to the English and metrical systems, &c. To this must be added that the standards of sorts brought into market are differently composed for the various threads, and that the divisions and subdivisions show the greatest variety of numbers in their mutual relations.

From a glance at this hasty sketch alone may be inferred that no further illustration is needed to prove that these differences must create disorder in commerce. Indeed it is considered troublesome to all interested in the matter, as not only is every one sensible of the injurious consequences which the manifold systems of coinage, weights, and measures do always occasion, but also that the ciphers of the numbers do not agree with the thickness of the thread; that an equivalent for the number of yarn of one system is hardly to be found in another; that a change is therefore required in the setting of the web when the compensating number is used; that to make a comparison of prices is rendered difficult if not impossible; that buyers are hindered from examining the correctness of the numbers of the yarn purchased, and therefore have to accept it on good faith; in short, the differences in marking the thickness of thread of the same spinning fiber within the same industrial territory are causing in the appropriation, calculation, and manipulation, more or less material inconveniences, complicate the technics and render trade in it difficult. It ought not to be overlooked that, without taking the necessary increase of machinery into account, the weaver of mixed material will be able, only by the assistance of a series of reciprocal ciphers and calculations arising therefrom, to calculate out of weights and number the length of yarn required, and out of this, and also out of the number and thickness of the thread, the weight of the standard of surface. These difficulties are, if possible, increased by the necessity arising in cases of litigation, as judges as well as parties are obliged to make deep researches in order to establish a ground for judgment. We would also allude to the circumstance that the practice of numbering, introduced in several countries, is founded on a system of measures and weights not used in the other trades with whom they are in business relations.

By reason of this the simplifying of the system of numbering yarn appears to be most urgently needed, from a technical as well as commercial point of view. The actual moment shows this necessity the more stringent as the change which has taken place in the legal system of weights and measures of a powerful industrial and commercial state will essentially favor the desired change. Apart from the alteration of antiquated ideas and the greater susceptibility for innovations which will be occasioned by this in Austria-Hungary and Germany, there is also the circumstance in favor of the question of numbering yarn being brought now to a solution, as the imminent introduction of the metrical system of weights and measures, as the only legal one, would, if the present system of numbering yarn should be continued, have as a consequence, that yarns would be bought and sold on this large area according to one, and numbered according to another system entirely different in its foundations, which would doubtless produce a division of opinions, and even a complete confusion.

*Questions 2 and 3.*

In considering the question of the numbering of yarn, the principle must be strictly kept apart from the question as to which system (weights or lengths) and according to what standard of numbering, yarn is to be brought into commerce. The difference in weight which many materials suffer in consequence of the conversion into yarn by intermixing with other material, or which occurs to other materials in consequence of their great affinity to the moisture of the atmosphere, determine in effect that certain yarn is only dealt with in commerce according to length, while others are only dealt with according to weight.



The compatibility of these various measures in commerce with the existing principle of numbering, common to both yarns, or, which is quite the same, the independence of both instances one from another, appears out of the existing circumstances as shown by the present trade in yarn. With the exception of silk, there at present already exists for all spinning material one system of numbering, the formula of which says: "The yarn number is given by the numeral which shows how often a certain length of yarn corresponds with a certain weight." Opposed to this general principle of numbering, we see that the flax-spinner sells his yarn according to length; the cotton-spinner, on the other hand, sells according to weight, notwithstanding that the calculation of the spinners of both spinning material is founded upon the weight; whereas the weaver of both materials calculates by the length of yarn, and that the price of each of these descriptions of webbing is arranged according to the number.

According to experience, it is not this deviation which burdens the international commerce in yarn, but it is, apart from the difference in the coinage system, the inequality of the system of measurement, referring to weight as well as length, the variety of subdivisions and of the principles of formation, on which they rest, and lastly the great number of transmutation numerals which embarrass commerce and produce the above-mentioned defects.

As a substantial relief the yarn-trade has therefore to welcome the period when all industrial territories shall exclusively employ the metrical system of lengths and weights, and the subdivision framed according to the decimal system.

As an instance, the following division of the reckoning quantities in linen-yarn will suffice, namely:

1 shock = 10 balls at 10 pieces at 10 hanks at 10 schneller at 10 skeins at 10 threads at 1 meter; or, in another form,

1 gross	=	1,000.000 meters.
1 pack	=	100.000 meters.
1 piece	=	10.000 meters.
1 hank	=	1.000 meters.
1 skein	=	100 meters.
1 lea	=	10 meters.
1 thread	=	1 meters.

This essential relief also will not, under the below-specified and further-developed conditions, interfere with any other yarns at present in use.

However praiseworthy the measure may be, yet it appears that the aim imagined by this work will not be yet accomplished through it. In opposition to the ruling difference of the parting-points, the adoption of one fundamental principle common to all yarns and generally adhered to should be attempted.

As the number of yarn is the result of only two elements, length and weight, so are in general only two principles of numbering possible:

1. The number of yarn is equal to the number of standard weights which is contained in a thread of a certain length.

2. The number of yarn is equal to the number of standard lengths which correspond to a certain weight.

It is evident that the question which of the two principles should be chosen can only be answered from the point of view of opportunity. It will, therefore, have to be examined which of these will be acceptable to and prove most profitable for the spinner, yarn-merchant, or weaver, being the parties most interested in it. The first, which assumes, to use other words instead of the above said formule, "the length as steady and the weight as variable," as, for instance,

No. 20 is yarn of which 1,000 meters weigh 20 grams,  
No. 100 is yarn of which 1,000 meters weigh 100 grams.

Or the second, which "combines variable length with fixed weight," as, for instance,

No. 20 is yarn of which 1 kilogram measures 20 kilometers,  
No. 100 is yarn of which 1 kilogram measures 100 kilometers.

With the first system it is plain that the number is lowering with the fineness of the yarn, and number and weight stand in direct relation. With the second, on the other hand, the number rises with the fineness of the yarn, and number and weight stand in inverse relation.

It appears when one of the elements is fixed, that is, when one of them, in an unchangeable quantity or in decimal division, is taken for a basis of the numbering of all spinning-yarns, both systems are equal in value. Both systems are easily comprehensible, convenient, and practically appropriate. Both render it possible to establish a general system of numbering for all yarns without including too many high figures or inconvenient fractions, if the standards of weight and length are adapted to the specific peculiarity of the various yarns. In the one case the steady standard weight is,



corresponding with the character of the spinning-material, represented in gram, deci-, centi-, milli-, deka-, hecto-, and kilo-gram, and in the other case the steady standard-length is represented in meter, deka-, hecto-, kilo-meter.

Owing to the metrical system, the objection that the numbering of the web of very coarse thread-stuff cannot be placed with some of the finest material on the same basis, without sensibly damaging the practical requisite of one or other description of web, is refuted in advance. A scope as is here given would completely satisfy the practical requirement of the various descriptions of webbing.

The establishing of any of these systems would render it further possible to find for the number of a spinning-material with the same easiness the equivalent number of the other spinning-material, as 10 or a higher potency of 10, according to the fundamental relations, will form either the factor or divisor. Unquestionably, therefore, one is, without making further examinations, already advanced nearer to the desired object through the wanton election of one of the two principles. As, however, the question is merely one of utility, it still requires a more penetrating examination as to which of the two principles gives greater advantages, and which therefore should have the preference.

If yarn numbers and weights stand in direct relation to each other, then the weight of a certain length of yarn, on which weight depends the quantity of the proper yarn for the production of a web, will be found by multiplying the number of standard lengths with the known weight of the standard lengths upon which the system is founded. Especially by fulfilling the above suppositions, the creation of standards for calculation or trade upon the basis of decimal division, this operation is unquestionably very easy to carry out.

If, therefore, this system of numbering recommends itself unconditionally from the weaver's point of view, it is also not to be misunderstood that the other system, from the spinner's and yarn-merchant's point of view, can anticipate a livelier acquiescence; and even the weaver will find, in certain cases, this other system more advantageous, as the number corresponds with the figure of standard lengths which are included in the standard weight.

The spinner will find by this system the calculation substantially simplified and relieved.

An analysis of the cost of producing the yarn shows that one part of the same is proportioned to the weight, inasmuch as the respective working-expenses (cleaning, carding, sorting) for all numbers of yarn remain the same. Another part, on the other hand, (slubbing, spinning,) increases with the fineness of the yarn, or what the same is with the increase of the length of thread, the weight remaining the same. A third class of expenses, however, (dressing, management, machinery, premises,) is to be applied, in such proportions as experience will show, to length and weight.

The higher the yarn number rises in consequence of the latter principle, the more value of labor is represented by the product. The expression in figures of such value is, on the base of this principle, extraordinarily easy. The cost of production, independent of the number, must accordingly be considered as fixed, and added to the price of the standard of weight of the raw material shows one item in the cost price of the yarn.

As for the later working expenses, occasioned by the conversion into yarn, however increased in proportion with the fineness of yarn, an average value-cipher can be established for each number; it follows therefrom:

1. That the price of production of a certain yarn is to be found, in each single instance, by a simple addition or subtraction.
2. That the fluctuation of prices of raw material in the same way are easily and safely to be valued in the finished fabric.

A simple addition or subtraction renders it possible, in one word, to ascertain forthwith the expenses for any number, as also the numerical statement of the influence of the price of raw material upon the cost-price of the fabric.

On the other hand, if the length is accepted as steady, then the items of account will be altered, as well as their mutual relations, and with these also the mode of calculation. If weight forms the only base of expense-calculation, then there will alter with each number, not only the price of labor, as before, but also the value of the material, and in consequence of this alteration arises the necessity of employing, for each number, for each fluctuation of price of the raw material, a tolerably complicated account.

The spinner as well as the yarn-merchant are equally interested, in a rational course of trade, to form an opinion of the cost-price of the different yarns, for which purpose an easy and possibly speedy mode of calculation is also of interest to him.

But the weaver also will find, what is easily to be proved, that in the case of buying yarn wound on this spindle, this numbering principle will be far preferable. It is also to be admitted that, however easy it is to find, in consequence of the fixing of one of the items, the other items in both systems, yet the system denoting the numbering by the length has still the advantage of an unparalleled simplicity.



One kilogram yarn, No. 36, for instance, without even making a calculation necessary, already expresses a uniform length of yarn of 36 (kilometers ecc.) But to find the length according to the other system, the following calculation must be made: 1,000 meters No. 36 make 36 grams; consequently go to 1,000 grams:

$$\frac{1000 + 1000}{36} = 27.777 = 27\frac{7}{9} \text{ kilometers.}$$

If we consider lastly the influence of views received by education and the not to be underrated power of habit, the numbering principles existing in practice plead also for the pre-eminence of the system, according to which the number stands with the fineness in direct, but with weight in inverse relations.

#### PROPOSITION 4.

On account of the length of the reel for flax and jute being  $2\frac{1}{2}$  meters, the calculation quantities will be made up as follows:

1 skein	= 40 reels	=	100 meters.
1 hasp.	= 25 skeins	=	2,500 meters.
1 piece	= 4 hasps	=	10,000 meters.
1 pack	= 10 pieces	=	100,000 meters.
1 gross	= 10 packs	=	1,000,000 meters.

Although this division differs in some respects from the above represented sections, yet it is in perfect harmony with the system. The unimportant difference in weights existing between the old and new numbers for manufacturers, can be equalized by slight alterations in caaming. The advantage of such easy calculation is consequently gained with barely a sacrifice.

The length of the hasp of 1 meter for the other yarns, will be generally too short for practical purposes; on the other hand, hasps of 2 meters will be too long. Should, however, the length of 1,000 meters be comprised in a precise number of thread, and the circumference of the hasp in meters give a not too complicated fraction, then only the numbers of 1,000, 800, 750, 600, and 500 threads, representing a circumference of the hasp of 1,  $1\frac{1}{4}$ ,  $1\frac{1}{3}$ ,  $1\frac{2}{3}$ , and 2 meters will appear possible; therefore, in regard to the above, only the circumferences of the hasps existing between the two limits are recommendable. The reel of  $1\frac{1}{4}$  meters has the advantage that it admits of being exactly expressed in full centimeters; therefore this size, although the circumference of the reel of  $1\frac{1}{3}$  meter approaches nearest to the present English cotton reel (corresponding one with the other as 1.371 is to 1.333) and appears consequently absolutely preferable.

42, Praterstrasse. February, 1873. Vienna.

The president of the imperial commission:

ARCHDUKE RÉGNIER.

The chief manager.

BARON DE SCHWARZ-SENBORN.





400	236	200	23.5	22.4	22.5
500	295	250	18.8	17.9	18.0
600		300	15.7	14.9	15.0
800			11.8	11.2	11.2
1000			9.41	9.00	9.00

The numbers given under A coincide with the French system for floss-silk and combing-yarn, which is also observable in column 6, page 11.  
For instance, With which number of the new system does Cockerill's number 10 carding-yarn correspond?  
To find this, we must proceed down this column to number 10, then to the left across to column carding-yarn, Cockerill, in which, on the same line, number 3.35 will be found.





*Representation of the most notorious systems of numbering yarn at present in use.*

## I.—COTTON YARN.

1. English (in use over the whole of Europe and North America) number = to the quantity of skeins of 840 yards, which equals 1 pound English. The English pound is the selling standard. The reel  $1\frac{1}{2}$  yard.

2. French (in use in France) number = the quantity in kilometers which equals  $\frac{1}{2}$  kilogram. Selling standard  $\frac{1}{2}$  kilogram. The reel 1.42857 meters, (70 threads to 100 meters.)

## II.—FLAX YARN.

3. English (in use in Great Britain, Germany, parts of France and Belgium) number = the quantity in leas, at 300 yards to 1 pound English. The gross at 12 bundles, at 60.000 yards = 270.000 yards for selling standard. The reel 3 yards in England, and  $2\frac{1}{2}$  yards in Scotland and Germany.

4. French (in France and partly in Belgium) number = the quantity kilometers, which equals  $\frac{1}{2}$  kilogram. Selling standard the gross at 10 bundles, at 50 kilometer = 500.000 meter. The reel  $2\frac{1}{2}$  meters.

5. Austrian (only used in Austria) number = the quantity hanks, about 3,660 Vienna ells, which equal 10 pounds English = 8.1 pound Vienna. The shock at 864.000 ells for selling standard. The reel 3 ells.

## III.—COMBING YARN.

6. German (used in Germany, Austria, and partly in France) number = the quantity of skeins of 840 English yards, which equal 1 Berlin old commercial pound. Selling standard the pack at 10 Berlin pounds. The reel  $1\frac{1}{2}$  yard.

7. French, old, (almost exclusively used in France, Belgium, the French Switzerland, Italy, and Spain,) number = the quantity hanks, at 720 meters, which equal 500 grams. Selling standard the pack of 5 kilograms. The reel 1.44 meters.

8. French, official, (seldom used,) number = the quantity of 1,000 meters to 1 kilogram.

9. English (in use in Great Britain and the weft spinning mills of the continent) number = the quantity of skeins at 560 yards to 1 pound English. Selling standard 1 pound. The reel 1,  $1\frac{1}{2}$ , and 2 yards.

## IV.—CARDING YARN.

10. Vienna (in use over nearly the whole of Austria) number = the quantity hanks at 1,760 Vienna ells, which equal 1 pound Vienna. The Vienna pound for selling standard. The reel 2 Vienna ells.

11. Bohemian (in use in only a part of Bohemia) number = the quantity hanks at 800 Leipzig ells to 1 pound English. The English pound for selling standard. The reel 2 Leipzig ells.

12. Saxon (in use in only a part of Saxony) number = the quantity hanks at 1,200 Leipzig ells to 1 pound English. The English pound for selling standard. The reel 3 Leipzig ells.

13. Berlin (together with the following in Germany and Belgium) number = the quantity hanks at 2,150 Berlin ells to 1 customs pound. The customs pound for selling standard. The reel  $2\frac{1}{2}$  Berlin ells.

14. Cockerills (used together with the foregoing, in Belgium and Germany) number = the quantity hanks at 2,240 Berlin ells to 1 customs pound. The customs pound for selling standard. The reel 4 Berlin ells.

15. English (in use in England and Scotland) number = the quantity hanks about 560 yards to 1 pound English. The English pound for selling standard. The reel 1 yard.

16. Sedan (in use in France together with the following) number = the quantity in hanks at 1,256 aunes to 1 old Paris pound. For selling standard the Paris pound as well as the  $\frac{1}{2}$  kilogram. The reel 1.2975 aunes.

17. Elboeuf (in use in France together with the foregoing) number = the quantity hanks at 3,600 meters to  $\frac{1}{2}$  kilogram. For selling standard the  $\frac{1}{2}$  kilogram. The reel 2 meters.

## V.—SILK, (RAW-SILK, ORGANZINE, AND TRAMS.)

18. Lyons (new style in use in Lyons) number = the quantity grains of the old Parisian market weight to a hank of 500 meters. The weights of the country for selling. The reel variable.

19. French, old (old standard in use, however, in France) number (Denier) = weight in grains to a hank of 476 meters, (formerly 400 aunes =  $475\frac{1}{2}$  meters.) The selling standard and reel according to the preceding.

20. Italian new (in use in Italy together with the preceding,) number = the weights in  $\frac{1}{2}$  decigrams to a lea of 450 meters. Selling standard and reel as above.

## VI.—FLOSS-SILK.

21. English, (in use in England and partly on the continent.) The same numbering as for English cotton yarn.

22. French (in use in France, Austria, &c.) number = the quantity of meters to 1 gram.

## VII.—JUTE.

23. English (in use in Great Britain and Germany) number = the quantity leas at 300 yards to 1 pound English.

24. Scotch (only partly in use in the spinning manufactories) number = the weight of a spindle of 48 leas, therefore 14,400 yards in English pounds.

*Reduction of the existing weights and measures to the metrical system.*

1 Vienna lb.	=	560.01 grams.	1 Vienna ell	=	0.77921 meters.
1 Customs lb.	=	500.00 "	1 Paris aune	=	1.18845 "
1 English lb.	=	453.59 "	1 yard	=	0.91438 "
1 Berlin commercial lb.	=	467.71 "	1 Berlin ell	=	0.66694 "
1 Paris lb.	=	489.51 "	1 Leipzig ell	=	0.6856 "
1 grain	=	0.053115 "			

*Particulars of spinning material and webs.*

	Wool.	Silk.
Specific weight of the fiber .....	1.26	1.30
Thickness of the fiber in millimeters .....	0.078—0.011	0.027—0.014
Length of the fiber in millimeters .....	25—500	
Usual numbers existing in commerce .....	4—140 Engl.	100—9 French.
Numbers according to the projected plan .....	5—160	90—1000 (9—100)

	Cotton.	Flax.	Jute.
Specific weight of the fiber .....	1.48	1.50	
Thickness of the fiber in millimeters ...	0.030—0.015	0.023—0.007	
Length of the fiber in millimeters .....	12.60	320—640	
Usual numbers existing in commerce ...	6—300 Engl.	1—300 Antr.	1—18 English)
Numbers according to the projected plan	10—500	$\frac{1}{2}$ —200	0.8—11 (8—11.

In the dispatch of April 15, 1873, the subject of the international patent congress was brought to your attention as follows :

## INTERNATIONAL PATENT CONGRESS.

Among the several important industrial and scientific congresses proposed, that upon the protection of property in inventions is especially interesting to citizens of the United States. The proposition for such an international congress has only recently been promulgated. It is stated that the suggestion proceeds from the United States Government. The sessions are to commence after the close of the jury deliberations on the 4th, 5th, and 6th of August next, and they will be opened by the director-general of the exhibition. The president and bureau will be elected by the members of the congress. The governments of nations participating in the exhibition are invited to be represented in the congress by specially appointed delegates. A general discussion of the question of patent protection is expected, and the opportunity to be heard is especially favorable for those who have found reason to criticise the operation of the Austrian patent laws as against the interest of American inventors. The whole question of protection of intellectual property is involved in the proposed discussion, though it may be premature and indiscreet to extend the deliberations beyond the subject of patent laws to the arts of design and to the question of international copyrights. Inasmuch as the subject is one of great importance to modern industrial progress, and especially so to American inventors, whose productions are found in every land, I hope that the commission will, in some special manner, indicate its appreciation of the opportunity to be heard in this international deliberation. It is a subject which certainly cannot be disposed of at this exhibition, but the foundations may be laid for a more general and complete congress of the nations as a part of our national celebration and exhibition in 1876. No more appropriate and significant discussion could be instituted at that time, and there is no other soil upon which the right of property in the productions of the brain as well as of the hands can be so freely and justly discussed. I append a proof copy of the official programme of the congress, translated from the German, (No. 80,) as follows :



"No. 80.]

## UNIVERSAL EXHIBITION IN VIENNA, 1873.

*"International congress for the consideration of the question of patent protection.*

## " PROGRAMME.

"In the series of disputed questions within the province of political legislation belongs at this moment the question of patent protection, or rather the question of the protection of the right of invention.

"As an object of legislation its origin extends back to former centuries, as, for instance, in Great Britain the right of the Crown to the concession of patents for invention was established by the acts of Parliament of 1623. But as a matter of controversy, it is scarcely twenty years old; yet, notwithstanding its recent date, it already possesses its peculiar history. The question of patent protection, as it now stands, includes no longer simply the inquiry how the right of the inventor is to be protected in the best manner, the most conformable to its design, and the least prejudicial to the general welfare; and whether the natural right of the inventor may be regarded in advance as absolutely justified; but the question rather imposes upon those who apply themselves to its consideration, first, the duty of refuting the latest doubts and scruples against the practicability and economical utility of such a protection; and then the endeavor to effect a uniform transformation of the existing law of patents, which is now as various as it is complicated.

"It would scarcely accord with the importance of the pending question of patent protection to disregard the chief arguments of its opponents. There exists to-day an anti-patent movement, which since 1860 has extended too far, and the causes of which movement bear, in part at least, too much upon views which are generally acknowledged by the economical progress of our age to justify at this time, as hitherto, a partial solution of that problem.

"The complete abolition of all patents for inventions, such is the motto of this movement; patent protection, the maintenance and improvement of the existing patent law, if possible in simple form, and by international agreement; such is the watchword of the other.

"The present condition of patent legislation in the most enlightened and progressive countries, shows on which side the majority stands; with the exception of Switzerland, and with her Holland, which recently abolished her patent law, the legislation of all the other industrial states to-day recognizes the protection of patents as a necessity; and the history of the patent system for the last twenty years is a continuous evidence of the tendencies of the respective governments, not in the direction of a gradual abolition, but in the direction of a thorough reform of patent protection, and especially in removing the disadvantages of a territorial limitation of patents granted for inventions.

"All the views, however, even those of the partisans of patent protection, unite invariably and unexceptionally in this, that the protection of the rights of inventors needs new forms corresponding to the altered international commercial relations; and that the solution of this question of reform should not be aimed at separately as hitherto, by each state of the great international commercial area, but rather that a complete solution common to all states should be accomplished by international agreement.

"This work of reform can the less dispense with such unanimity, as the present territorial limitation of patents for invention forms one of the chief defects of the existing system, and, as matters now stand, the days of patent protection on the continent may be regarded as numbered, should the effort fail to establish an universal rule and introduce it into the law of nations.

"We live no longer in the day of industrial action, which is strictly confined and is removed from foreign competition, and where slow communication prevents or delays the utilization of inventions. We live at a time of liberal customs policy; steam and electricity have newly united once isolated seats of industry in a way undreamed of, and the mutual exchange of goods shows to-day a magnitude which a generation ago one could not have imagined. Under such altered relations, the patent granted for an invention in one country becomes in fact a restriction unprofitable and obstructive, if the same invention, without limitation or increase in price, becomes in an adjoining country common property. The artisan who, in the one country, must work with the auxiliary material there patented and therefore dearer in price, will suffer an essential injury as soon as the same material is produced in the other country, not only without restriction, but with a damaging competition. Moreover, a continuance of the hitherto antagonistic views and measures would scarcely conduce to the preservation of general harmony; and if, for example, patent protection were maintained in one country, so as to attract thereby skilled operatives from another, then the danger of disturbance of the international industrial balance might readily be apprehended. Such and similar



inconveniences can only be met by the common action of all civilized states, disposed to the maintenance of patent protection.

"The solution of this problem may be alike difficult and tedious, but the impossibility of its solution has, however, not been proven, and it is, at all events, a problem the importance of which is worthy the effort.

"But where for such an attempt could be found an occasion more appropriate and more legitimate than one where the laboring part of mankind meet from all quarters of the world in peaceful rivalry; where men of science, and of practical ability, scientific artisans and political economists, representatives of the higher industry and the smaller trades, unite to bear testimony of the high degree of culture to which education, labor, and inventive spirit have advanced the human race?

"The Vienna Exposition of 1873, called for the embodiment of universal progress in culture, would seem more peculiarly adapted to pay tribute to the spirit of invention, even from the stand-point of modern legislation, and to form the starting era for a new and universal codification of the rights of inventors. Had there been any doubt of the connection of this right with the aims and ends of such an universal exposition, previous exhibitions would have solved it. The recent patent legislation of England is the immediate result of the London expositions of 1851 and 1862, while the Paris expositions of 1855 and 1867 produced, as is well known, temporary protection laws, which it was thought expedient to imitate, in the preparatory acts for the Vienna universal exposition of 1873. (Law of 13th of November, 1872.)

"In pursuance of these views, and following a suggestion of the Government of the United States of America, the general direction of the universal exposition intends to unite with the exposition an international congress, which shall discuss the question of patent-right. Should this discussion, as may be foreseen, induce a vote in favor of patent protection, it will then be the task of this congress, on the basis of the experience of various countries and the materials collected, to proceed to a declaration of fundamental principles for an international reform of patent legislation.

"The international congress for the consideration of the question of patent protection is to take place after the close of the jury deliberations, on the 4th, 5th, and 6th of August, 1873, under the following regulations:

"1. Manufacturers, scientific artisans, political economists, and other experts are entitled to participation in the congress, in both its full and sectional deliberations, and in its decisions.

"2. The applications for participation in the congress must be made to the respective exposition commissioners, domestic and foreign. Based upon the applications communicated by these commissions (at the latest by the end of June, 1873) to the director-general of the universal exposition, cards entitling the applicants to membership will be transmitted to them.

"3. It will rest with the governments of nations which exhibit to be represented in this congress by special delegates.

"4. At the seat of the general direction a committee of preparation will be appointed, whose duty it shall be to prepare the materials to be laid before the congress, to elaborate the matters of inquiry, and in general to prepare all the preliminary matters for opening of the congress.

"5. The director-general of the universal exposition opens the congress. After its opening, the congress elects from its members the president and the bureau, determines the order of business for the accomplishment of its work, and proceeds then to a general discussion of the question of patent protection.

"The decisions of the congress will be communicated through the several commissions to the respective governments.

"6. The language of the congress is German, but the English, French, and Italian are also admitted.

"7. All written communications, works, and propositions relative to the international congress for the consideration of patent protection, are to be addressed to the general direction up to the time of the opening of the congress, but during its sittings, to the bureau of the congress.

"The president of the imperial commission:

"ARCHDUKE REGNIER.

"The chief manager:

"BARON DE SCHWARZ-SENBORN.

"42 Praterstrasse. March, 1873. Vienna."

A preparatory committee was duly organized in accordance with section No. 4 of the programme, and held several sessions before the opening of the congress on the 4th day of August.

There were about two hundred persons in attendance at the opening, and great interest in the subject was manifested. The congress



was called to order by Baron Schwarz-Senborn, who made a short address of welcome in the name of the Archduke Regnier, the president of the imperial commission.

Mr. William Siemens, of London, was then elected president of the congress, and Baron Schwarz-Senborn, honorary president.

The names of the preparatory committee were then announced by Baron Schwarz, as follows:

Pieper, Carl, civil engineer, Dresden.

Ratkowsky, Dr., jurist, thesianum, Vienna.

Rosas, Dr. Frank Edler V., financier, Vienna; chief of the bureau of the general direction.

Hill, Hamilton A., associate commissioner of the State of Massachusetts to Vienna.

Blake, William P., geologist and mining engineer, member centennial commission, delegate to international jury.

André, Dr., jurist, Osnabrück; member state syndicate, member of the commission of the Association of German Engineers.

Bauer, Dr., professor at the Polytechnic Institute, Vienna; member of the imperial and royal commission, and delegate to the jury.

Brachelli, (Hofrath,) Vienna; superintendent of the statistical department in the K. K. Handelsministerium, and member of the imperial and royal commission.

Grothe, Dr. Herman, engineer, Berlin; editor of the *Polytechnischen Zeitung*.

Hartig, Professor, Dr., Dresden; member of the Royal Saxon patent commission, and juror.

Jannasch, Prof. Dr., Proskau, Silesia; political economist, author of the prize essay *Den Musterschutz und die Gewerbepolitik des deutschen Reiches*.

Jenny, Dr., Vienna; professor at the Polytechnic Institute, member of the imperial and royal commission, and juror.

Klostermann, Professor Dr., Bonn, Ober-Bergrath, etc.; author of treatise on arts and inventions.

Langen, Eugene, Cologne; president of the Association of German Engineers.

Newwirth, Joseph, author, Vienna; member of the imperial and royal commission.

Reuleaux, ———, Berlin; government privy councillor, director of the Royal Academy of Arts and Trades, and juror.

Rosenthal, Dr., jurist, Cologne; author of the prize essay on the protection of the rights of inventors.

Schwarz, Dr., professor of technological chemistry at Gratz, and juror.

Siemens, Dr. Werner, Berlin, member of the commission of the Association of German Engineers.

Siemens, Dr. C. William, D. C. L., F. R. S., London, president of the Institution of Mechanical Engineers.

Thacher, J. M., Washington, assistant commissioner of patents, and delegate to the congress.

Webster, Thomas, London, Q. C., F. R. S., and special reporter of the proceedings of the congress to the British government.

Weinmann, Dr. F. L., London, member of the royal British commission.

The names of the following gentlemen were then announced as delegates to the congress, by letter or special appointment, from associations or their respective governments.

Aureliano, P. S., Roumanian Principality.

Baumhauer, Dr. E. A. v., Netherlands.

Codozza, Gio., Italy.

Frankl, E., state railway director, Sweden.

Klostermann, Ober-Bergrath, Bonn, German Empire.

Metaxa, T. v., Greece.

Ott, C. Adolph, Switzerland.

Thacher, J. M., United States.

Vischer, —, Würtemberg.

Webster, Thomas, F. R. S., England.

Seguro, D. Porto, Brazil, South America.

The following programme of points for discussion was submitted by the preparatory committee :

UNIVERSAL EXHIBITION 1873, VIENNA INTERNATIONAL CONGRESS FOR THE CONSIDERATION OF THE QUESTION OF PATENT PROTECTIONS.

The preparatory committee, in accordance with section 4 of the programme No. 80, proposes :

The international congress may please to resolve—

I. The protection of inventions is to be guaranteed by law in all civilized countries.

Protection by patent, if guaranteed in an adequate and judicious manner, will be conducive to stimulate useful inventions, to improve the mode of production, thereby increasing production itself and making it cheaper and to extend the consumption, thus promoting national welfare. On the other hand, if there be no (or an inadequate) protection of inventions, national industry will become stagnant and retrograde, the spirit of invention will be stifled, the introduction of new inventions checked, and the native inventor forced to seek a more favorable field of action elsewhere, where his talent will be recognized and his labor protected and rewarded.

This question will be introduced by Mr. Carl Piper, C. E., of Dresden.

II. If the object of patent protection is to be attained in an adequate manner, it will be imperative that the various States should bring about, as speedily as possible, by international agreement, a reform of the patent legislation.

III. As regards the rules to be established, the congress recommends in particular the English and American laws as a basis, as well as the draught of a law proposed for Germany by the Society of German Engineers.

This point will be introduced by Dr. Hermann Grothe, of Berlin.

IV. As fundamental principles for an international agreement on patent legislation, the following points should be kept in view :

(a.) It is desirable that the various states should publish and exchange all patents directly after they have been granted in such a manner that copies of each patent may be inspected by the inhabitants of other countries.

This question will be introduced by Professor Dr. Klostermann, of Bonn.

(b.) It would be, if at all possible of accomplishment, advisable that each state should admit and attach to its patent-office representatives of other countries.

To be introduced by Professor Dr. Klostermann, Bonn.

(c.) It is to be recommended that a system of preliminary examination should be adopted analogous to the provisions of the laws above mentioned.

This point will be introduced by Dr. Rosenthal, of Cologne.

(e.) The expenses of obtaining and keeping in force a patent should be moderate in all countries, and based upon a progressive scale.

To be introduced by Professor Jannasch, of Prokau, in Silesia.

(f.) Only the first inventor, his heirs, and assigns, are entitled to a patent.

To be introduced by Dr. Ratkowsky, of Vienna.

In consideration of the great difference that exists in the present patent jurisdictions, and of the change that has taken place in international communication, the necessity of reform is evident, and it is of pressing moment that the Government should endeavor to bring about an international understanding upon the patent law as soon as possible.

Thus, it would be advisable, if practicable, that each State should admit a representative of the other states into its office, and that immediately after the granting of any patent it should be published and interchanged, so that subjects of all other states might have access to the copies of each patent.

Referent: Syndicus Dr. André.

Discussion ensued upon minor points, but always with great unanimity upon the general principles of protection of inventions. The opposition manifested in some quarters to patents was not considered



to be of much strength, and to be due in large part to the imperfection of the several systems existing in Europe, and the essential differences in those systems producing inequalities and confusion. It was fully believed that such imperfections were capable of being remedied, and that the inconveniences and any opposition would disappear so soon as a general understanding could be had and a common and reciprocal system established. All were therefore desirous to utilize the opportunity to lay the foundations for such a system. Whatever difficulties might attend the effort, they considered the problem to be one worthy of the study of the best minds of all nations. The occasion, also, was considered to be eminently fitting; for, in the language of the programme, there were gathered from distant lands "the men of science and practical ability, scientific artisans, political economists, representatives of the higher industries and the smaller trades, and all amid the triumphs of genius and industry. There could not be a better opportunity for inaugurating the beneficent works.

Sessions were held daily from the 4th to the 8th of August, and the resolutions, as finally adopted, were published in No. 102 of the official programmes, and are as follows:

No. 102.] UNIVERSAL EXHIBITION, 1873, IN VIENNA.

INTERNATIONAL CONGRESS FOR THE CONSIDERATION OF THE QUESTION OF PATENT PROTECTION.

*Resolutions adopted on the 4th, 5th, 6th, 7th, and 8th of August, 1873.*

I. The protection of inventions should be guaranteed by the laws of all civilized nations, because:

(a.) The sense of right among civilized nations demands the legal protection of intellectual work.

(b.) This protection affords, under the condition of a complete specification and publication of the invention, the only practical and effective means of introducing new technical methods without loss of time, and in a reliable manner, to the general knowledge of the public.

(c.) The protection of invention renders the labor of the inventor remunerative, and induces thereby competent men to devote time and means to the introduction and practical application of new and useful technical methods and improvements, and attracts capital from abroad, which, in the absence of patent protection, will find means of secure investment elsewhere.

(d.) By the obligatory complete publication of the patented invention, the great sacrifice of time and of money, which the technical application would otherwise impose upon the industry of all countries, will be considerably lessened.

(e.) By the protection of invention, secrecy of manufacture, which is one of the greatest enemies of industrial progress, will lose its chief support.

(f.) Great injury will be inflicted upon countries which have no rational patent-laws, by the native inventive talent emigrating to more congenial countries, where their labor is legally protected.

(g.) Experience shows that the holder of a patent will make the most effectual exertions for a speedy introduction of his invention.

II. An effective and useful patent-law should be based on the following principles:

(a.) Only the inventor himself, or his legal representative,\* should be entitled to a patent.

(b.) A patent should not be refused to a foreigner.

(c.) It is advisable, in carrying out these principles, to introduce a system of preliminary examination.

(d.) A patent should be granted either for a term of fifteen years, or be permitted to be extended to such a term.

(e.) Simultaneously with the issue of a patent a complete publication of the same should take place, rendering the technical application of the invention possible.

(f.) The expense of obtaining a patent should be moderate; but, in the interest of the inventor, a progressive scale of fees should be established, enabling him to abandon, when convenient, a useless patent.

\* This was understood to include the nominee or authorized agent of the inventor.—Th. W.

(g.) Facilities should be given, by a well organized patent-office, to obtain in an easy manner the specification of a patent, as well as to ascertain what patents are still in force.

(h.) It is advisable to establish legal rules, according to which the patentee should be induced, in cases in which the public interest may require it, to allow the use of his invention to all suitable applicants, for an adequate compensation.

(i.) The non-application of an invention in one country shall not involve the forfeiture of the patent, if the patented invention has been carried into practice at all, and if it has been rendered possible for the inhabitants of such country to purchase and make use of the invention.

(k.) In all other respects, and particularly as regards the proceedings in the granting of patents, the congress refers to the English, American, and Belgian patent-laws, and to the draught of a patent-law prepared for Germany by the Society of German Engineers.

III. Considering the great differences in present patent administration and the altered international commercial relations, the necessity of reform is evident, and it is of pressing moment that governments should endeavor to bring about an international understanding upon patent protection as soon as possible.

IV. The congress empowers the preparatory committee to continue the work commenced by this first international congress, and to use all their influence that the principles adopted be made known as widely as possible and carried into practice.

V. The committee is likewise authorized to endeavor to bring about an exchange of opinions on the subject, and to call, from time to time, meetings and conferences of the friends of patent protection.

VI. To this end, the preparatory committee is hereby appointed to act as a permanent executive committee, with power to add other members to their number, and to appoint the time and place for the next meeting of the congress, in case such meeting should be considered necessary for the promotion of the foregoing resolutions.

The honorary president of the international patent congress,

BARON VON SCHWARZ-SENBORN.

The president of the international patent congress,

WILLIAM SIEMENS.

The permanent executive committee so constituted met soon after and organized as follows: (Extract from the official programme of the exhibition, No. 113.)

*Meeting of the executive committee appointed by the international patent congress to carry out the resolutions of the congress, passed on the 4th, 5th, 6th, 7th, and 8th of August, 1873, with power to add to their number.*

Held on Saturday, the 9th of August, Baron von Schwarz-Senborn, honorary president of the congress, in the chair.

Present: William Siemens, president of the congress; Th. Webster, Q. C.; Mr. Hamilton Hill, Mr. Engen Langen, Dr. v. Rosas, Dr. Jannasch, Dr. H. Grothe, Dr. Weinmann, Dr. jur. Rosenthal, Syndicus Dr. André, Hofrath v. Engerth, Professor W. P. Blake, Mr. Carl Pieper, C. E.

It was resolved:

1st. That the honorable J. M. Thacher, Mr. B. B. Hotchkiss, and Mr. S. Remington, of the United States, be added to the committee.

2d. That Baron von Schwarz-Senborn be president of the executive committee, whether residing at Vienna or elsewhere.

3d. That Mr. William Siemens be requested to write a preface or introduction to the proceedings of the congress, to be dedicated to Baron von Schwarz-Senborn.

Mr. W. Siemens acceded to this request.

4th. That Mr. Carl Pieper, C. E., of Dresden, be the general secretary of the executive committee.

5th. That Dr. v. Rosas, of Vienna, be treasurer of the executive committee.

6th. That Dr. Rosenthal, of Cologne, and Dr. v. Rosas, act as special assistants to the general secretary for the publication of the proceedings.

7th. That the members of this committee residing in foreign countries constitute special local committees of their respective nationalities, with power to add to their number, to carry out the resolutions of the congress.

Each local committee to be empowered to enroll members, call meetings and collect subscriptions of one pound sterling, or upward, per annum, to be accounted for to the



general secretary and treasurer, and to do such acts as may be necessary for carrying out the resolutions of the congress.

8th. That the president and general secretary prepare by-laws, to be submitted to a general meeting for approval.

The honorary president of the international patent congress:

BARON DE SCHWARZ-SENBORN.

The president of the international patent congress:

WILLIAM SIEMENS.

A written report of the proceedings of the congress was by request submitted to Dr. Banhaus, the Austrian secretary of the interior, who received the permanent executive committee and listened to explanations concerning the proceedings. The committee also had a conference with Count Audrany, the minister of foreign affairs.

The proceedings have since been printed in Dresden, under the supervision of Mr. Carl Pieper, the general secretary.

#### INTERNATIONAL CONGRESS OF LAND AND FOREST CULTIVATORS.

The following copy of the programme (No. 93) issued upon this subject, sufficiently shows the range of discussion and objects of this congress:

The modern age becomes ever more and more impressed with the question of the identity of the interests of nations; and this gives rise to the endeavor in every branch of industry and production to utilize the converging points of communication for the profitable interchange of views.

In agriculture also, isolated working has long been abandoned. The numerous unions, the assemblies which take place every year in different localities and congresses, are a speaking proof that the requirements of the age are understood.

But the more liberal ideas of the day demand and justify, even under such circumstances, an extension of the hitherto limited territorial boundaries; they demand, indeed for many purposes, an international combination.

The culture of land and forests offers also many international relations which may become the foundation of union.

The resolution was therefore adopted to establish during the exhibition of 1873, among others, a congress of the cultivators of land and forests, which has for its purpose to consider the important questions of agriculture, including several districts, and to effect, according to the nature of the questions, a uniform proceeding, and, where possible, a uniform legislature.

The international character of this congress requires for its working different forms from those which have served in societies of a territorial character, the more so as the question of the international protection of birds, which has for a long time occupied the attention of the ablest authorities, and of the governments of different States, will constitute an important feature in the discussion of the cultivators of land and forests.

It appears, namely, necessary that the different states taking part in the congress should be represented by their deputies, and that, through their interposition, a certain number of the most distinguished men in the question of land and forest culture should, through the invitation of the president of the congress, be induced to take part in this discussion.

This assembly consisting solely of invited members, the constitution of the congress will be less the result of chance, and in addition to that, the limitation of invitations—thus rendered possible—to the most prominent men of this branch will lend greater importance to the congress and to its discussions.

The direction of this congress was conferred by the president of the imperial exhibition commission, his imperial highness Archduke Régner, upon the undersigned imperial minister of agriculture.

The president will be supported by vice-presidents, the election of whom will take place according to the relative number of representatives of the participating states; further, there will be a managing committee, in which all the states taking part in the congress will be represented by their delegates.

The vice-presidents will be invited by his imperial highness Archduke Régner to the acceptance of this post of honor.

The final determination of the subjects of discussion for the congress will follow through the presidents, with the concurrence of the delegates of the states taking part herein.

The international congress of land and forest cultivators will sit from the 19th to the 24th of September.\*

The language of the congress is German, but English, French, and Italian are allowable.

All writings, works, and propositions are to be addressed to the undersigned president, provided with the superscription, "International congress of land and forest cultivators."

Vienna, June, 1873.

The president of the international congress of land and forest cultivators :

JOH. CHEVALIER DE CHLUMECKY,  
*Imperial Royal Minister of Agriculture.*

The Chief Manager :

BARON DE SCHWARZ-SENBORN.

The following was subsequently issued, (No. 95 :)

#### VIENNA.

The items of the programme which, subject to a final confirmation, were adopted for the international congress of land and forest cultivators, taking place in Vienna from the 19th to the 25th of September of this year, are :

1. What measures are to be taken for the protection of birds which are useful to the cultivation of the soil ?

2. Upon what points, and methods of collecting of land and forest statistics, does an international agreement appear desirable for the attainment of comparative results ?

3. What points of the land and forest experimental cultivation require the establishment of an international system of observation ?

4. What international agreements appear advisable for preventing the devastation of forests ?

#### CONCLUDING OBSERVATIONS.

Each succeeding great exhibition brings its fresh harvest of experience, and the teachings of all, but especially of 1873, should not pass unheeded in the preparations by the commission for the exhibition in 1876. A recapitulation of some of the teachings is therefore not inappropriate as a conclusion of this report, to the sections of which reference may be made for the data and amplification in detail.

#### BAD EFFECTS OF TARDINESS.

There is one oft-repeated lesson which seems never to be learned in season—the disastrous effects of tardiness in preparation. Not to be ready on the opening day entails dissatisfaction, a disposition to depreciate and to complain, a loss of enthusiasm and popular interest, and a loss not only of receipts, but to the exhibitors and to the utility of the exhibition. Not to be ready at the appointed time is a serious breach of the etiquette of hospitality, for in the international exhibition of 1876 the people of the United States are to be the host of all nations. Attention to this subject cannot be too strongly and constantly urged upon all who are to take part in the work of administration or as exhibitors.

#### NECESSITY OF SYSTEM.

The advantages of a thoroughly systematic arrangement over one which consults chiefly fine effects and convenience in placing, were never more manifest than by contrast of the Vienna exhibition with that at Paris in 1867. System and fine effects are not only possible together,

\* The international exhibition of horses, poultry, dogs, pigeons, &c., takes place from the 19th to the 27th of September, and the international races from the 21st to the 23d.

The president proposes to organize excursions to some of the most remarkable estates in the neighborhood of Vienna.



but one may be made to assist the other. The Paris dual system was a great step forward in the organization of exhibitions, and it was never so much appreciated as at Vienna. Systematic arrangement, under a comprehensive classification, needs to be promoted, not sacrificed. The form and the interior arrangements of the building must be such as to conform to and not to warp the system.

A systematic display promotes the great object of an exhibition, which are not to impress the eye merely or to please the fancy, for such effects are evanescent, but a good system tends to survive the exhibition and to permeate and give an organic development to the literature of industries. Such effects are lasting and universal in their nature. System is better than size. There should also be thoroughness of representation, so as to give a just idea of our industries and resources. Such thoroughness cannot be secured without special effort. The work of the committees of admission and the departmental committees at Paris is referred to, and also the unwritten labor of many at Vienna, as at all great exhibitions, for spontaneity in the exhibition of many desirable objects is not the rule but the exception.

#### COMPACTNESS ESSENTIAL.

The exhibition buildings should not be straggling and widely separated. The interdependence of the industries needs to be shown as far as possible. A universal exhibition should be a microcosm, a unit, not a congeries of separate shows. Compactness is an essential feature. It promotes success. Only a fraction of the visitors to the Vienna exhibition saw the machinery-hall or the agricultural buildings. The fine display of agricultural machinery from the United States in a separate building was rarely visited. The building was generally empty while the main transept of the industry-palace was full of visitors.

#### ACCESS TO BE EASY AND CHEAP.

Accessibility is one of the conditions of success. It certainly should not cost more than the entrance-fee, as it did at Vienna, for those who consulted their time and comfort. The transportation should not only be cheap, but rapid. Horses are not to be relied on; when most needed they are inadequate. The horse-railways must be supplemented by steam service, and all should deliver passengers at a central point under cover, and the cost of transportation should be included in the price of admission.

If the exhibition is large, means of rapid transit from one part to another should be provided at a trifling cost.

#### UNIFORM RATES OF ADMISSION.

The price of admission should be low and uniform. The receipts are greatest at a low price.

#### SANITARY AND POLICE REGULATIONS.

The generous provision for the comfort and health of visitors at the exhibition, and for the maintenance of order, is worthy of all emulation. Hardly a case of drunkenness or disturbance was known during the attendance of the millions of visitors.

## COSTLY BUILDINGS TO BE AVOIDED.

It is hardly necessary to say more upon the subject of the cost of the buildings. The demolition of the industrial palace, after the brief six months of occupation, is a sufficient commentary upon the wastefulness of a costly plan with elaborate decoration. Rigid simplicity and cheapness of construction, as far as consistent with the safety of the objects, should be the rule. The building should be subordinated to its contents.

The receipts from visitors should not be over estimated. The statistics upon this point are ample and instructive. Neither should an exhibition be expected to be self-sustaining in immediate pecuniary returns, although the ultimate benefits to the national prosperity far outweigh all expense and trouble involved in the undertaking.

## PROMPT PUBLICATION OF CATALOGUES.

The absence of a full catalogue at the outset is not only an inconvenience, but a defect. It impairs the usefulness of an exhibition. The difficulties in the way of a prompt publication of a complete list are many and well known, but they can be surmounted.

The invoices of every exhibitor should be printed, and duplicate copies should be transmitted. Blank forms for the catalogue should be issued. If every exhibitor could be made to realize the great advertising advantage which an early issue of a good catalogue gives, there would be little difficulty in securing a full list in time. The entries might be stereotyped upon the system once proposed by Professor Jewett, or on some other equally rapid and economical plan.

## STATISTICAL AND DESCRIPTIVE INFORMATION.

Information concerning the objects exhibited in a concise printed form is very desirable. Statistical data are much sought for on such occasions, and their absence is a blemish and loss. It is greatly for the interest of exhibitors to furnish such information in a printed form to representatives of the press, to experts, to jurors, and reporters. By the early dissemination of such information the popular interest in an exhibition is augmented. Early provision should be made for securing a statistical introduction to the catalogue of each group of the exhibition. It was done at Paris by the committees of admission of each class, and the introductions so prepared were among the most valuable and enduring contributions to industry.

## PROVISION FOR REPORTS.

Suitable provision should be made at an early date for securing a series of thorough reports upon each group of the exhibition. The selection of persons for this duty should not be deferred until after the opening. The requisite study of each subject should proceed *pari passu* with the preparations, and in many instances the persons best qualified to stimulate the successful exhibition of any group of products would be the best persons to select for the preparation of a report.

The publication of such reports should not be delayed long after the close of the exhibition, and, as proposed by the Archduke Rainer, at Vienna, they should be separately printed, in a cheap form, so as to be within the means of the people and to secure general distribution.



## PROTECTION OF INTERESTS OF EXHIBITORS.

There is evidently a want of an organization for the protection and furtherance of the interests of foreign exhibitors. My intercourse with the exhibitors has shown this. They feel the want of some assurance that their goods will be duly protected and cared for, especially when the owners cannot attend. They wish also to be represented faithfully in a commercial business way. No definite plan has been proposed, but one of the foreign commissioners who regarded such an organization as a necessity said that it should have official sanction, and in its pecuniary responsibility invite the confidence and respect of all the exhibitors.

---

[Inclosure A in Appendix C.]

## SENTIMENT AND CO-OPERATION ABROAD—DONATIONS.

*Synopsis of a report presented in December.*

UNITED STATES CENTENNIAL COMMISSION,  
No. 904 Walnut Street, Philadelphia, December 15, 1873.

*To the Executive Committee of the United States Centennial Commission :*

GENTLEMEN : Having completed my mission to Vienna, in accordance with your instructions, I now present a preliminary report upon some subjects not already covered by my dispatches, and which seem to me important to bring before you at the earliest moment.

## THE GENERAL SENTIMENT REGARDING OUR EXHIBITION ENTERPRISE ABROAD.

It is with great satisfaction that I can report the existence of the most friendly and even enthusiastic feeling in regard to the centennial exhibition. It is looked forward to by all classes with inquiring interest. The statesman and political economist expect to derive from it fresh and more correct information regarding our institutions and resources and a deeper view of the great future of the American people. The men of science expect richer harvests than ever before of material for investigation, and look forward to the coming re-union of the nations in the New World as the opportunity to see some of its marvels with their own eyes. The industrial classes, with appetites whetted by what they have seen of our inventions and manufactures at Paris and Vienna, desire a nearer view and a broader association with the elements of our successful progress. The merchants and tradesmen believe that in our exhibition they will have the most favorable opportunity to extend their trade and to introduce products of a higher culture than we yet can claim. These are some of the elements, in general, upon which the interest in our exhibition is based ; but I have not mentioned one which I am sure, from personal interviews with leading men of the various foreign commissions, jurors, and statesmen, comes of a broad and liberal sympathy with all that conduces to human progress and the realization that international exhibitions are potential in this direction. Much of the interest is engendered by the recognized fact that for the first time the American people are to have an international exhibition. It is spoken of as the *first* international exhibition in America under Government sanction and patronage. The Government is regarded as its responsible founder and sustainer. The undertaking is not regarded as in any degree local, but as the enterprise of the country and Government. Ever since, on the 4th of July last, the President of the United States issued his proclamation announcing the exhibition, and commending it to all nations who may be pleased to take part in it, the enterprise has become, in the eyes of the world, a national one, to which the honor and prestige of the people of the United States and of the Government are fully and irrevocably committed. In this great work the States are considered abroad as a unit.

Europeans look upon the undertaking as the outgrowth of a national patriotic sentiment seeking tangible and useful embodiment, to be followed out in the spirit in which it was conceived, and destined to be one of the crowning glories of the century. It is believed and freely expressed that the originality, energy, and power of meeting emergencies shown by the American people will, with our great resources, insure a grand exhibition, worthy of the efforts of the exhibitors and of the country.



The international exhibition, as you may judge from the foregoing, is already widely known in Europe. I may say that this results in a great degree from the representation of the centennial commission at Vienna. The opportunity was unique and golden. It was as necessary for imparting information concerning our work as for gaining knowledge in reference to the exhibition.

#### MAKING OUR EXHIBITION KNOWN ABROAD.

Soon after my arrival I had the honor of being presented, as representing the centennial commission, to their Imperial Majesties the Emperor and Empress of Austria, and thereby had the opportunity of making the object of the commission known to them. Later, when the Emperor visited the American section of the exposition, the large map of Fairmount Park, placed there by Mr. Schwartzman, for the park commission, was examined by him with evident interest. I subsequently had a favorable opportunity of conversing at some length with the Archduke Carl Ludwig and several of his friends upon the subject. Having been appointed a delegate to the international jury I was a guest upon the brilliant excursion of the jury to Pesth, where the Hungarians received and entertained with princely hospitality nearly one thousand persons of all nations for three days. In this re-union much interest was shown in regard to what America proposed to do for another exhibition, and reference was made by one of the Hungarian statesmen to a possible re-union of the jury there. There were present on that occasion Dr. Banhans, the Austrian minister of commerce; Count Zichy, of Hungary, and other prominent statesmen. The information so given was widely spread through the German press. At the international patent-congress, Baron Schwarz, in a closing speech, said that, if the members were not called together before, they should try to meet at Philadelphia in 1876.

In Hungary I had the most enthusiastic assurances of sympathetic co-operation in our exhibition, and I have no doubt the representation from that country will be very large and interesting.

#### WHAT FOREIGNERS EXPECT.

A very intelligent interest was manifested generally by the exhibitors at Vienna, and there were inquiries for the regulations in detail of our exhibition. It is here my duty to state plainly that, notwithstanding the very favorable disposition shown not only by Austro-Hungary, but by the German Empire, Belgium, and other countries, they will not participate with us unless they are fully satisfied with our plans and regulations. The exhibitors are now so habituated to great international exhibitions that they are intelligent critics of their organization and regulations. They have had disagreeable experience in some respects, and they will not subject themselves to like difficulties. They, therefore, look with anxiety to the tenor of our regulations, and it behooves us to exercise extreme caution in regard to them.

I herewith submit some of the points upon which anxiety has been manifested, and suggestions have been made by some of the foreign commissions and exhibitors:

First. Protection of their property and protection of the interests of exhibitors. To this end the organization of a responsible body to act as agent of foreign exhibitors to receive, place, describe, guard, and to dispose of or return articles sent, and further to give information concerning them to jurors or others,

Second. A well-devised system of awards, a judicious selection of jurors, and effective organization of the jury.

Third. Facilities for transportation and protection from needless expenses of moving, unpacking, placing, and removing goods.

Fourth. Favorable and simple customs regulations.

Fifth. Permission to trade under proper restrictions.

Sixth. Facilities for advertising.

Seventh. Early publication of a good catalogue assured.

Eighth. Provision for descriptive reports and publication of the results of the exhibition.

#### DONATIONS TO THE PERMANENT MUSEUM.

I am happy to announce the commencement of the collection for the permanent museum. The first donation consists of a valuable series of the iron ores of Sweden, presented by Mr. Danfelt, the Swedish commissioner. This initial donation is a nucleus about which I hope a splendid collection, illustrative of the mineral riches of the world, may be grouped.

#### IRON ORES OF SWEDEN AND NORWAY.

Of these iron ores there are nearly one hundred massive samples, ranging from ten to fifteen inches square, all selected with great care from the chief mines and beds by Professor Akerman, of the Royal Mining Academy. This collection, with the samples of iron and steel, these last not donated, &c., cost the Iron Association about \$10,000.



## COPPER ORE FROM NORWAY.

From the Norwegian commission we received a very fine massive block of yellow copper ore, weighing some two tons.

## ORNAMENTAL BRICKS AND TERRA COTTA.

A very attractive display of architectural bricks, terra cotta moldings, and majolica slabs for insertion in the fronts of buildings was made by the Wiener Ziegels fabric and Ban Gessellschaft. I am glad to report the presentation by them of a suite of specimens of their bricks, tiles, and moldings, including some of the relief majolica slabs in the *renaissance* style, such as are used for door and window casings.

I also secured a somewhat similar series, but of different forms and objects from the celebrated Rennberg brick and tile works, near Berlin, Prussia, the company having presented their entire exhibition for the permanent museum.

It is my belief that these two collections will not only be very interesting to our architects and lovers of applied art, but of some service in the way of suggestions to our brick manufacturers.

## COLLECTION OF MANGAN IRON, BAUXITE, ETC.

In the Austrian section there was a remarkable display of spiege iron and mangan iron, with samples of bauxite, &c. This was donated, but afterward withdrawn with the intention of sending us a much finer series of specimens, with fresh fractures, in 1876.

## OZOKERITE AND PETROLEUM.

We have also received a box of samples of ozokerite, a peculiar "earth-wax" from Hungary, together with the associated minerals. This is a very interesting natural product, mined near Pesth, and it is destined to be the basis of extended manufactures.

## IMPORTANCE OF A CERAMIC COLLECTION.

I regretted very much that I did not have the means of securing samples of the ceramic art of various countries, but especially of Hungary and Bohemia. A small amount of money would have enabled me to secure a very attractive series of specimens for the museum, for there was a great accumulation of such objects at the exposition.

## CHINA AND JAPAN WILL EXHIBIT.

The exhibitions of China and of Japan were made in great part upon a commercial basis, and were attended with such a degree of success as to leave no reason to doubt that the people and the government will send us an equally good, if not better, exhibition in 1876.

The governments of these Eastern nations generally take a great pride in making a good exhibition from their respective countries. Money is freely appropriated by them for such purposes. In fact, in Europe, as well as in Asia, the governments regard the great exhibitions as essential features of modern progressive civilization, and they systematically make the required appropriations for them. Not to do so would be regarded as a neglect of a national and international duty.

## A TURKISH BAZAAR.

Some Turkish merchants of wealth, who made extensive exhibitions of goods and carpets in Vienna, called upon me to state their desire to erect, in connection with our exhibition, a grand Turkish bazaar, like that at Constantinople, and to have also a Turkish coffee-house, and a complete Turkish bathing establishment; in fact, to construct a Turkish village in a suitable part of the grounds contiguous to the main building. They propose to make the bathing place large enough to accommodate about fifty persons at one time, and to have Turkish attendants, so as to give a bath in the true Oriental way.

They wish the privilege of trading, and, if possible, to erect all the structures by Turkish labor, workmen being imported for the purpose, under the belief that it would be much cheaper for them than to take the mechanics of the country, who are not familiar with the style of construction and of finish of the Turkish buildings, and who, especially at that time, will be in great demand for the ordinary kind of buildings.

(Inclosure B in Appendix C.)

EXTENT AND COST OF EXHIBITIONS.

Tabular sta'tement of the extent, cost, and receipts of the principal international exhibitions since the year 1851, inclusive.

Year.	Place.	Area of the buildings.			Total space.		No. of exhibitors.
		Sq. meters.	Sq. feet.	Acres.	Sq. meters.	Acres.	
1851	London ...	92, 663	1, 000, 000	20	.....	.....	15, 000
1853	New York. ....	.....	249, 692	5 $\frac{3}{4}$	.....	.....	7, 000
1855	Paris.....	169, 691	1, 866, 000	30	.....	.....	23, 954
1862	London ...	113, 287	1, 291, 800	24	.....	.....	28, 653
1867	Paris .....	160, 000	.....	40 $\frac{1}{2}$	459, 340 or 687, 835	119	50, 226
1873	Vienna ....	200, 572	.....	50	1, 131, 235	280	70, 000

Year.	Place.	Number of visitors.	Cost per sq. foot.	Total cost.	Total receipts.	Period open: days.
1851	London ...	6, 039, 195	. 85	\$1, 464, 000	\$2, 530, 000	141
1853	New York. ....	.....	.....	500, 000	.....	.....
1855	Paris.....	5, 162, 330	1. 81	4, 000, 000	640, 500	200
1862	London ...	6, 211, 103	1. 25	2, 300, 000	2, 300, 000	171
1867	Paris.....	10, 000, 000	.....	4, 596, 763	2, 822, 932	210
1873	Vienna.....	7, 254, 687	.....	9, 850, 000	2, 000, 000	186

NOTES IN EXPLANATION.

- 1851.—The cost stated may be said to be the price paid for the *use* of the building, which building remained the property of the contractors. If its cost had been included, the sum should be increased at least \$500,000 or more. The cost per square foot should be doubled.
- 1853.—The information is very meager. No final report published. The building cost \$200,000. The total cost of the exhibition was not less than \$500,000. The area of the building, by including the galleries, was greater than the area of the ground on which it stood. This was only 445x455 = 202,475 square feet.
- 1855.
- 1862.—The receipts as here stated include a contribution of £11,000, say \$55,000, from the contractors for the building to cover deficiency, apparently.
- 1867.—The receipts are here exclusive of the grant, or subvention, of 12,000,000 francs by the state and city of Paris. The whole area is, as stated in the final report, 687,835, but this includes Billancourt. The Champ de Mars alone is 459,340 square meters.
- 1873.—The expenditures and receipts are here only approximately given, according to the latest returns in November, 1873. The receipts do not include the sale of the buildings, &c.

[Inclosure C in Appendix C.]

OBSERVATIONS ON GREAT EXHIBITIONS.

Translation from a work by Dr. W. F. Exner, "Der Aussteller und die Ausstellungen," Weimar, 1873.)

UTILITY OF EXHIBITIONS—HISTORICAL NOTICES.

That exhibitions are useful need not be stated. No civilized nation would ever refuse to co-operate in them. But to know this alone is not sufficient; those taking part in exhibitions must learn to understand their benefits, which, indirectly, are either mental or material.



## INTELLECTUAL BENEFITS.

Through an exhibition of the works of human activity and the exertion of many different individuals, information is rapidly imparted, and much of such information could not be so completely given in any other way. Science recognizes in an exhibition a new and important stimulus to improvement, especially in economic and statistical science, commerce, finances, and education.

But the benefits are not confined to the scientific; the knowledge of the thousands who arrange, exhibit in, and patronize such expositions is increased and strengthened. Every visitor to an exhibition becomes involuntarily more or less instructed. The impressions received are often lasting, and stimulate earnest study, which leads to new exertion and new results. Every man of whatever occupation or station in life finds in an exhibition opportunity to gain rich experience in some way or other.

An exhibition also directly stimulates mental progress. Many visitors of foreign birth learn the language of the country where an exhibition is to be held, in order to be prepared for it. Architects make plans for buildings, tariffs are made, competition is encouraged, and rivals learn of each other.

The mental advantage of exhibitions is very considerable. Colleges, academies, pamphlets, &c., cannot accomplish in years what one *great exhibition* can do in the field of mental progress. By a *great exhibition* is meant an international, or world's exposition, although circuit or local exhibitions have a similar effect in a less degree.

By circuit or local we understand a small part of a state of large dimensions, (county exhibitions or state fairs,) the exhibitions of which should be encouraged by government, as very useful for knowledge of details, but these circuits being often small and not divided according to their produce, but politically, their exhibitions are but fragments of a whole, and must invite other neighbor districts to make up an exhibition.

A splendid example of this was the "*Merseburg*" Industrial Exposition in 1864, in which the following districts took a share: Saxony, the circuit of Leipzig, Claustral, in Hanover, the domains Weimar and Eisenach, Gotha, Altenburg, Anhalt, Meiningen, the principalities Schwarzburg, Sondershausen, and Rudolphstadt, and so furnished life to the whole organization.

A "World's Fair," or international exhibition, means the bringing together the products of one, of many, or of all branches of activity of all mankind. Amsterdam invited, in 1865, the floriculture of all the world to an exhibition. In 1865, Paris had an international cheese exhibition. The agricultural exhibition in Paris, 1866, and the first international exhibition in London, in 1851, were of greater dimensions and caliber. Universal exhibitions, in which all mankind, with raw produce, industry, and art, take part, the world had only three; in Paris, 1855, London, 1862, and Paris, 1867. We are on the eve of a fourth.

These exhibitions give us an insight into the culture of mankind at large, and show us just what progress each nation has reached. They are nation-wanderings in the sense of the 19th century, not with destruction, but to cultivate, to improve, and to benefit. In an exhibition we study and witness the history of mankind. Exhibitions were not called into life for the sake of mental progress alone; pecuniary profit was the first instigation; the nobler purposes were of later growth. The material profit extends to the promoters, the visitors, and exhibitors. Under the first we understand government or corporations, who call it into life. Exhibitions should always be supported by government and city corporations; the former, because it is the duty of governments to further all noble enterprises; the latter, because the profit to a city having an exhibition is immense.

Art-exhibitions may take place immediately, one after another. The most proper or suitable city should be selected for exhibition. Munich, for example, would not be the place for a universal exhibition, but would be well chosen for an art-exhibition. Erfurt would be as great a failure for an industrial exhibition as it would be successful with horticultural shows. A good and suitable place for an exhibition should possess, first, a degree of perfection in the produce invited for exhibition; second, sufficient accommodation for visitors; third, good communication with the residences of foreign visitors.

Material profit to visitors and consumers exists in the great selection of objects offered, the best opportunities to buy good and cheap. The statement of consumers that the cheap sources can be found without exhibitions is not correct; many firms become known only through exhibitions; a cheaper and more time-saving method of examining all the sources of produce, at the same time, does not exist; but the examination must be done systematically and sensibly, to derive knowledge and profit without fatigue.

The German public have gained the noblest result from exhibitions, and are now cured of the insane idea that the products of foreign countries excel their own. The consumer no longer buys abroad what he can procure, more advantageously, at home. \* \* \* The practical advantage of the exhibitor is always great; he has to make great sacrifices and take great risks, but the prospect of *real* gain is great, and the participation must not be considered a lottery, but a legitimate speculation.



The best evidence of the benefit to exhibitors is in the history of expositions. The forerunners of exhibitions were the fairs and prize-exhibitions originated by art and trade-unions; in London, one took place in 1756; in Paris originated the idea of an industrial exposition, with distribution of prizes, at the time of the directorial government, and carried out in 1798, in which one hundred and ten visitors took part. The imperfect mode of locomotion, communication, and transport, and the low state of industry, (art excepted,) made those beginnings of exhibitions very small. Our century has the merit to have brought expositions to their ripeness. In the first half of the nineteenth century all civilized countries, especially the Germans, tried to embody the idea of exhibitions. Munich, 1818; Dresden, 1824; Berlin, 1827; Prague, 1828; Vienna, 1835 and 1839; then followed Moscow, 1825, and Madrid, 1841. In France followed larger and smaller exhibitions; 1801, 1806, 1819, 1823, 1827, 1834, 1839, 1844, 1849. England waited, observing all, while Germany, encouraged, undertook greater exhibitions, the first of which took place at Mainz. Berlin followed with a second, 1844, in which three thousand exhibitors participated. Vienna had one, in 1845, with two thousand exhibitors. England, at the instigation of the *anti-corn-law league*, had exhibitions in Manchester, 1843; in London, 1845, 1847, 1849. Besides these, art and picture exhibitions were received with joy wherever they were called into life.

It is said that the first idea of inviting the whole world to friendly competition originated in Paris in 1844, but it was a German who worked out the idea of a great universal exposition in a pregnant form. Prince Albert, consort of the Queen of England, said, in 1851, "The exhibition shall be a proof and a living picture of the height of civilization and development of mankind, and give convictions that success in this direction can only depend upon the help which we give one another, through peace, love, and help, not only among individuals, but, also, all the nations of the earth." The exhibition in London, 1851, was built after a plan of Paxton, and, under the title Crystal Palace, was counted among the wonders of the world. The palace contained two thousand separated spaces 24 feet by 24 feet. The number of exhibitors was 14,837, out of which England, Scotland, and Ireland furnished 7,381; Germany, 1,720; Austria, 748. The space under cover, occupied, was 799,000 square feet.

In 1850 the export of England amounted to £131,000,000 sterling; in 1853, (after the exhibition,) £214,000,000. This increase was mostly owing to the influence of the exhibition. In the industry which depends upon good machinery and cheap fuel England was in advance; Germany in skill of art and science; France in matters of taste of form, in which England with all her means and energy has since then made enormous progress. The South Kensington Museum owes its origin and existence to the exhibition of 1851. Germany, too, has done her utmost not to be behind in these matters.

New York followed, in 1853 and 1854, the example of London, only with the intention; the result was not a success; only 7,000 exhibitors were present, of whom 3,400 belonged to the United States and England. The failure of that, and the great civil war, may be the reason that the Americans have so far not been prominent in exhibition undertakings.

The general German industrial and trade exposition, in Munich, 1854, was till then the greatest in Germany; it had 6,588 exhibitors, of which 2,331 Bavarians were the most active. In 1857 Switzerland had an industrial exhibition with 2,000 exhibitors. In 1861 followed an industrial and art exhibition in Florence. In 1860 were four larger exhibitions in France, (Chalons sur Marne, Metz, Nantes, and Marseilles.) Between 1855 and 1862 were exhibitions in Havre, Bordeaux, and Besançon.

#### SAFETY OF EXHIBITION-GOODS.

The safety of exhibition-goods consists in three periods; the first is the packing and transportation of goods, the second comprises the duration of the exhibition, the third begins at the end of the exhibition.

#### TRANSPORTATION.

It is safest to intrust the transportation of goods to the commission generally appointed by the government. Packing-cases should be made of strong wood and water tight; the covers should never be nailed down, but fastened with screws. All packages and boxes should be conspicuously marked with the name of the firm, to avoid mistakes. Directions for unpacking should always accompany every box. It is very important not to pack in one box goods belonging to different classes. The boxes or packages should not be too large, and the instruction how to unpack should meet the eye at the opening of the box or package.

#### THE SECOND PERIOD.

There is a choice of places in every exhibition for different objects. To one object the sunlight, for example, may be of a great benefit, and may damage the others; so would a damp place be injurious to silks, &c., but not to minerals.



Fire, water, direct sunlight, dust, and the immorality of people are the factors of damage. It need not be stated that everything in an exhibition should be fully insured. Ignitable materials should never be exhibited; matches might be represented without phosphorus, or imitations (*fac similes*) of other objects that are dangerous might appear. Smoking should be strictly prohibited.

A more dangerous and merciless enemy than even fire and water is dust; in an exhibition glass cases and covers are the only means of help; especially over night all things should be well covered, but even glass cases are not dust-proof, and should often be cleaned on the inside.

*Direct sunlight* is injurious to many things, like colors, and should be avoided.

Malicious destruction is prevented and guarded against by an intelligent public.

Theft can hardly ever take place in the principal passages; the commission generally provide sufficient guardians, but to very valuable goods separate watchmen should be engaged. Wire fences are good means of safety, and bills requesting "not to touch" should in every case be applied.

#### THE THIRD PERIOD, AFTER THE EXHIBITION.

It will be always to the interest of the exhibitor to sell everything he can during the exhibition, even without any profit, and save the freight it would cost to go back, besides the probability of damage to goods traveling to and fro. Things of little value, as samples, &c., should always be left as presents to museums, being in this way a good advertisement for the exhibitor.

If goods are to be sent back where they came from, it should be done *without delay* after the close of the exposition.

\* \* \* \* \*

The separate objects exhibited must be so arranged that their advantages can be rapidly recognized, and that the public should, without the least loss of time, find everything they wish to see. This condition attained, the exhibition has the utmost perfection. So far it is only an ideal, which, however, is our desire to realize.

#### PREPARATIONS FOR EXHIBITION.

##### EXHIBITION UNIONS.

An exhibition is the beautiful result of the association principle. Two kinds of such unions are known; the one is a union of exhibitors of the same branch of industry or domicile to exhibit their goods under one name collectively; for example, all firms of one city unite and exhibit their produce collectively under the title, "The industry from——." Exhibitions of this co-operative principle have great advantages; it saves expenses, and articles when separately exhibited are almost lost to the observer, but win prominence in collective exhibitions.

\* \* \* \* \*

The formation of such unions should take place very early. Exhibitors cannot make their preparations too soon. Committees should issue their circulars without delay.

\* \* \* \* \*

##### REPRESENTATION OF PROCESSES.

Just as interesting as the exhibition of objects in motion or action is the exhibition of objects in their process of manufacture. Methods and processes will always be interesting and gather a great crowd of visitors. An example of the great success of this manner of exhibition was the "gold-washing process" in 1862, exhibited by Victoria. An increase of this method of representation is urgently recommended, this being the best way of showing the skill of the workman, and every other advantage that can be claimed for the process, to the world. A substitute for this method is the exhibition of objects in different stages of progress of manufacture.

The French have the best taste in exhibiting. However good and skillful the products and works of other nations may be, none can equal the French.

There was not one of the six millions of visitors in the third international exhibition who has not seen the gold pyramid under the eastern dome. That pyramid, gilded on the whole surface, represented the quantity of gold produced in Victoria since the existence of the colony. This happy idea of the government of Victoria made the gold product of that colony the general topic of conversation in 1862.

##### PLACES FOR REST.

An exhibition should have two different kinds of resting-places; rest from mental work, and rest from physical exertion. Groups separated from one another are recommended; such divisions tempt the tired student of the exhibition to rest. Without such



places he will rush onward until quite exhausted. Chairs should liberally be distributed in the whole building; such resting-places invite the visitor to stay longer. In all places commanding a view over a great portion of the exhibition resting-places should be made; lounges should be placed around trophies. Exhibitors in whose neighborhood such resting-places are, have of course great advantages, and there is no doubt that a great many would furnish seats at their own cost, provided they could obtain the sanction of the commissioners to place them in front or in view of their objects. Economy of space should never be carried too far at the expense of the comfort of the public.

#### FEES OF ADMISSION.

The entrance-fees should be low. Large numbers of persons at small admission-fees will give greater returns than *vice versa*. It has been found practicable to make different prices for different days; once or twice in the week to have the admission-price higher than on other days. In countries like England, where Sundays are most religiously kept, exhibitions are closed on Sundays. This we think a mistake; Sunday is the only day which the workman can call his own, and therefore the only opportunity for him to see and enjoy the exhibition. Sundays and holidays would attract the greatest number of visitors, especially if the charge for admission would be low on such days. Mondays and Saturdays the charges should never be high. Exhibitions are generally open only in the day-time, but there are cases where exhibitions open in the evening were successful; the idea should not be thrown away without further consideration.

#### DRAWING IN THE EXHIBITION.

In many exhibitions the drawing of objects is strictly prohibited; this is certainly a great mistake. To some exhibitors it would be very agreeable; to others it would make no difference at all. If some exhibitors object to the drawing of their objects, why should it be prohibited in all cases? Those who object might easily put up a notice to that effect; besides, it cannot be effectually prevented, and the disadvantages to exhibitors through sketching of their object is seldom of any account. Anybody wishing to imitate a certain object can easily buy it. Is it not for sale? Where is the damage in its being sketched? An expert can, however, retain the whole thing without sketching it. Such narrow views should never exist in connection with such large undertakings.

#### BEAUTY OF EXHIBITION.

The more a land becomes civilized, the more will trades be elevated to arts. To exhibitions it is greatly due that, since the beginning of the second half of the nineteenth century, taste and beauty in the arts have been cultivated in their truest sense.

#### PERMANENT EXHIBITIONS.

The chief purpose of permanent exhibitions is to extend all practical inventions and improvements of, at home and abroad, as far, and as much as possible, especially those of machinery and tools for trade and industry; and through the exhibition of the best produce, to stimulate imitation and development, and finally to enlarge the field for commerce for producer as well as consumer. Some of those exhibitions are devoted to special branches of industry; for example, machine-industry and art-industry, which are generally called museums. The exhibitor can expect from permanent exhibitions the same results as from the temporary ones; temporary exhibitions not being renewed so often, advantages and results cannot be expected to be so rapid, but the more successively increasing and more considerable. The principal object should not be, however, a commercial one, but the culture and development of trade and industry should be kept in view; therefore should objects of doubtful value be excluded from permanent exhibitions. Such exhibitions have increased wonderfully since the London Exhibition of 1862, especially on German ground, to the best advantage in all directions.

#### HISTORICAL.

Industry-museums are half a century younger than the exhibitions. The largest industry-museum, "South Kensington Museum," originated after the exhibition and has become a model institution in many respects. Another magnificent institution of the same kind is the *Conservatoire des Arts et Metiers*, in Paris. Both were built by the state; as are also the *Musée de l'Industrie*, in Brussels, the Model Magazine in Stuttgart, and the Museum for Art and Industry in Vienna. Next to those in importance are the Exhibition for culture in trade, in Munich, the Permanent Exhibition, in Hanover, Industry-Hall, in Karlsruhe, the Trade Museum in Nuremberg, the City Museum Exhibition in Leipzig, in Basel, Breslau, Bruchsal, Görlitz, Liegnitz, Nordhansen, Ueberlingen, Frier, &c.; all of these were called into life by trade-unions. In France and England they



also have been quite active in this direction; a very important institution of this kind is the Museum of Art-Industry, in Paris, under the direction of *Viollet le duc*. Least of importance are the private permanent exhibitions, which are mere mercantile speculations; for example, the exhibition of machinery, founded by the Wirth brothers, in Frankfort on the Main; for trade produce in Leipzig, founded by Fredirici, &c. To promote export trade several states have established permanent exhibitions in places where they hope to find a good market; for example, in Salonichi and Rustschuk, arranged by the Austrian consulate, the results of which are yet to be seen.

With regard to the arrangements in permanent museums the rules mentioned in chapters 2, 3, and 4 will hold good, but even more attention must be paid to beauty and comfort than in temporary exhibitions, and, this can the more easily be effected because there is plenty of time for constant improvement and for more advantageous arrangements. In the use of a permanent exhibition the public must have the greatest liberty possible, and should consider it as their property, use it, increase and protect it as such. Complementary or allied to permanent exhibitions, are other institutions, as for photography, printing, engraving, chemical laboratories, mechanical shops, libraries, collections of drawings, and finally, and of greatest importance, schools in their various organizations. The first-named establishments are indispensable for art-museums; the technical workshops, for purely industrial museums; the rest are of great advantage to museums of any kind.

The principle of division of labor should be guarded by all industrial museums, inasmuch as they should not all follow the same branch of work.

Collections of drawings often answer the purpose of models, and even the object itself, and take up but very little room; in this direction very little has been done for permanent exhibitions. For the union of education with museums we plead most earnestly, and were it only in the form of lectures on the different branches of science and industry, with illustrations through the objects contained in the collection.

An arrangement which proved good in Switzerland is a combination of a money advance-fund with the trade-hall, out of which an exhibitor may get an advance upon his exhibited objects, by means of which a great many tradesmen are aided to buy the raw material, at least, and continue his activity when his business is dull. For the benefit of workmen permanent exhibitions should be kept open in the evening hours, and especially on Sundays. If admission-fees are charged they should be as low as possible.

The use of book and drawing collection should be granted with the greatest liberality. Reproductions by means of photography and cast, &c., if not given gratis, should at least be sold at cost price.

Permanent exhibitions require, even more than the others, extensive advertising and especial support of the press.

The oldest German industrial museum is in Stuttgart; and, under the direction of Dr. Steinbeis, it has grown to be one of the most prominent institutions of its kind in Germany. The beginning of the collections was made in 1849, which were continued with such energy and good judgment that it may now be counted among the richest permanent exhibitions in Germany. It is only a great pity that the building is not a better one. The catalogue is very well arranged, and contains 400 pages. It is particularly practical. At the heading of each department is a well-written historical technological notice about the objects belonging to the department.

The exhibition is divided into twelve groups: (1) Minerals, stone, earthen, and glass goods; (2) raw metals; (3) metal goods; (4) instruments; (5) wooden ware, &c.; (6) leather, leather goods, &c.; (7) weaver-work, &c.; (8) paper goods and book-binding; (9) drugs and chemical products; (10) machinery; (11) tools; and (12) household objects. It has a workshop, an atelier for drawing for the promotion of the instruction in art-industry. Under the same auspices are 108 industrial schools in Württemberg, which, in the year 1865-'56, had a status of 8,264 scholars. The library, whose catalogue has 448 pages, is a very good one, and open to the public.

The *Imperial Austrian Museum for Art and Industry* has, for the short time it was opened, (May, 1864,) achieved remarkable results. It has proved very practical to change the exhibition of art-objects, which are borrowed from different collections and private individuals, the exhibition of school-works, the publication of a well-edited monthly periodical, &c.

The *Industrial Hall in Karlsruhe (Baden)* was called into life three years ago, after the model of that in Stuttgart. Although small in dimension, the organization and arrangements are perfect. Those above named are state institutions. Among the exhibitions directed by trade-unions, the most prominent are in Hanover, Nüremberg, München, and Hamburg. The most prominent feature in the Nüremberg exhibition is the advance-fund for sewing-machines, loan and support fund, the girls' industrial school, the library, the chemical laboratory, the popular lectures, &c.

The *permanent exhibition in Hanover*.—There is hardly an institution with so clear and decided a purpose as this. Its chief aim is the education of working-men. Great



praise is due to the Prussian government, which supports the Hanoverian trade-union, as did formerly the Hanoverian government.

*The Art-Industrial Museum in Cöln* was founded by Consul-General (Austrian) Oppenheim, and will in a short time be opened.

The gladly-anticipated project of a permanent exhibition in Dresden received a hard blow in 1866, from which to recover is very difficult, but an ultimate success is still hoped for.

Of all the permanent exhibitions, the South Kensington Museum, in London, will, for all time to come, be a model of which the nation may justly be proud. We give only a few notices about the lectures, library, and museum.

Lectures are held morning and evening, from eighty to one hundred per year, which are partially free of admission. When requested, certain lectures can be repeated.

The library has 15,000 volumes, and a rich collection of engravings, drawings, and photographs of architecture and ornamentation. The administration of this library is very practical. It is not required (as in other libraries) that the visitor should specify the title of the book he wishes to use. If a workman, for example, does not know the title of a work upon a certain subject, or has not the skill to select from the mere title of the catalogue, the officials are bound to lay before him the books which will answer his special purpose.

For the use of the library, small fees are charged: 6 pence per week, 1 shilling 6 pence a month, 3 shillings a quarter, 10 shillings a year, &c. Registered students of central schools for art and science have free admission.

Every local school of art is entitled to borrow objects of art, valuable drawings, and books from the South Kensington Museum; and already, in 1854, a great selection of works of art circulated among the different schools of art in the Kingdom, where millions had the opportunity to make practical studies in industrial art which until then was the privilege of only those living in London. Reports show that, in 1860, this "traveling museum" went to twenty-six places of the United Kingdom, was seen by 306,987 persons, (mostly scholars of art-schools,) and yielded £6,011 7s. 10d. sterling; although such articles as porcelain and glass were sent three hundred miles and fifty-six times packed and unpacked, not a thing was broken or damaged. \* \* \*

A permanent exhibition of household objects and objects calculated to improve the condition of workmen is the museum in Twickenham, S. W. London. The present collection was commenced in the building of the Society of Arts, 1856. In 1858 the whole collection was considerably increased and put up in the Polytechnic Institution, and finally in a building of its own. It owes its existence to the celebrated philanthropist, Mr. Thomas Twining. The museum consists of the following classes: (1.) Drawings of buildings, especially such which refer to homes for workingmen. (2.) Building materials. (3.) Furniture and implements, with regard to its use for the poorer classes. (4.) Texture materials and clothing. (5.) Nutriment; illumination materials. (6.) Health preservation. (7.) Domestic education, self-culture, &c. (8.) Divers articles. (9.) Household library. Arrangements are also made for lectures on physics, chemistry, natural history, physiology, and upon the separate classes of the museum. The whole institute is popular among all classes, and of special benefit for the working classes, and is just as much a model of its kind as the South Kensington Museum, whose motto is:

"To know that which before us lies in daily life  
Is the prime wisdom."—*Milton*.

Not only in Germany, England, and France, but even less cultivated countries recognize the importance and necessity of such museums as the means to advance and promote art and industry. So is Saint Petersburg on the way to establish an art and industry museum. Even in Venice, the home of art, they have opened a permanent exhibition of art-industrial objects in the *Istituto delle Scienze, Lettere, ed Arti*.



## APPENDIX D.

## REPORT OF MR. HENRY PETTIT, CIVIL ENGINEER, SPECIAL AGENT TO VIENNA EXHIBITION.

VIENNA, AUSTRIA, *April 14, 1873.*

DEAR SIR: In compliance with your communication of the 25th of February last, appointing me special agent of the United States Centennial Commission to visit the universal exhibition to be held in Vienna, Austria, and instructing me to report to you by the 1st of May, 1873, such plans, papers, and suggestions as may, in my judgment, be necessary, I have the honor to present the accompanying report, together with plans, drawings, maps, papers, &c.

\*                      \*                      \*                      \*                      \*                      \*

I am, with great respect, your obedient servant,

HENRY PETTIT,

*Special Agent United States Centennial Commission.*

Hon. D. J. MORRELL,

*Chairman Executive Committee*

*United States Centennial Commission.*

## REPORT.

## I.—SITE OF THE VIENNA UNIVERSAL EXHIBITION.

The buildings for the Vienna universal exhibition have been erected in the imperial park called the Prater, which is situated just outside the Leopoldstadt suburb, and within half an hour's walk from the Stephen's Platz, or center of the city. Along one side of the Prater runs the new channel of the Danube River, and on the other side the Danube Canal, the latter of which separates it from the city. By reference to maps Nos. 2 and 3, accompanying this report, it will be noticed that although the Prater lies close to the city, yet it is really *outside* of it, and therefore, so far as *convenience of location* is considered, it would be difficult to find anywhere a situation better suited to the requirements of an exhibition. Much of the scenery in it has been beautiful, and it has been one of the favorite resorts of the public for many years. Several photographs, showing views in the Prater *before* these present buildings were erected, accompany this report.

At present, access to the exhibition-grounds has been provided for carriages and pedestrians by several large avenues, the principal one of which is the Haupt Allée, or Grand avenue, a noble straight boulevard which enters the Prater as shown in photograph No. 1, and runs nearly parallel with the great industrial palace through the entire park, from end to end. This avenue has about the same relation to the Vienna exposition buildings that Elm avenue will have to our centennial buildings. It is about one hundred and twenty feet in width, and is arranged with a center carriage-drive of forty feet wide, which is entirely too

narrow, as it is not an uncommon thing already to see vehicles seriously incommode each other from lack of room.

This carriage drive is flanked on the side *away* from the exhibition-buildings by a road for equestrians, and on the side next the buildings by a foot-walk, about 20 feet wide. There are four rows of trees, planted about 20 feet apart, in strips of sodded bank, (9 feet wide,) which separate the different parts of the boulevard.

The carriage-drive is laid with broken stone, which is daily rolled with heavy cast-iron rollers, and the foot-walks laid with gravel. Lamp-posts are placed along the curb-line at every 60 feet, and opposite to each other. Water-plugs at intervals.

*No tramways for street-cars* have as yet been laid on this avenue.

The whole site for the exhibition proper has been fenced in by a board-fence some 12 feet high. For about 2 feet down from the top this fence is made of *lattice-work*, and at the ground-level each board is cut to a point; the rest is *close*, the boards being nailed to horizontal rails supported by wooden posts set into the ground. The finish is simple but ornamental, and the general effect very good.

## II.—PREPARATION OF THE GROUND—FOUNDATIONS AND DRAINAGE.

The Prater, in which the exhibition is located, lies close to the river Danube, and its soil is a deposit from that stream.

It consists principally of loose sand and gravel, and water is reached by digging, on an average, ten feet below the level of the ground.

The surface of the park was originally covered with trees of medium size. Some of the photographs show these trees still standing in the courts between the transepts of the industrial palace at the time the photographs were taken.

The surface of the Prater was also very irregular, being intersected in every direction by ditches and hollows, which were evidently at one time water-courses.

Such circumstances determined the nature of the foundations used for a large part of the exhibition-buildings.

In Austria the bricks are not so good as we are accustomed to see in Philadelphia; in fact, a large proportion of them would be rejected from first-class work; but wood is comparatively cheap, and therefore, as the nature of the soil in the Prater is such as to render shallow footings insecure, and as water is soon reached, it was decided that piles were the best for the foundations, and they were, therefore, used wherever they could be properly and safely introduced.

An immense amount of grading was thus saved, as the proper levels for the floors and walls were obtained by simply sawing off the piles to the required height. Portions of the foundations, however, which were subjected to heavy weights, and especially those for the permanent buildings, were founded on the best concrete footings, made with pebbles from the river-banks, and on the top of these were raised the foundation-walls of the best brick-work.

The "nave," which is temporary, but a large construction, has a foundation on a footing of rough concrete made of broken bricks.

All the small transepts, together with the buildings that form the various façades, and all the floors of the entire palace, are carried on pile foundations.

The industrial palace stands on a small terrace elevated about two feet above the general level of the park. This was accomplished by driving the piles until their heads stood at the required level, and the



terrace was formed artificially around the building by using gravel, which was brought by rail from the bed of the Danube.

In some cases the piles are cut off level with the ground, and a footing for the walls is made of heavy beams resting on the ground, with their ends only supported by piles. Many of the covered walks are made in this way, by using these beams as curbs, and filling in with the bituminous-rock pavement, which resembles asphalt, but as to its exact composition I have not yet had time to investigate.

The piles used were on an average ten inches across the head, and when sunk for wall-foundations were about five or six feet apart, and from ten to fourteen feet in depth.

Foundations for iron columns in the nave were of six piles in a group, and in the transepts of four piles.

The flooring in the industrial palace consists of boards, six by one and three-quarter inches, laid transversely of the building, with half-inch spaces between, to allow the dust to pass through. These are laid on joists, which are carried by the beams resting on the pile-heads.

There is no cellar under the buildings, but simply an empty space between the top of the piles and the natural level of the ground; the walls of the building closing in the sides.

Openings for ventilation occur at intervals.

It will be noticed from the above that the amount of leveling off to be done was not much, considering the immense magnitude of the undertaking; and what was done cost the general direction but a comparatively small amount, the government having done the grading by soldier-labor, and charged the direction with the expense, viz, a few cents per day for each man.

The following statement will explain how this occurred:

The Austrian government and the municipal authorities of Vienna have been engaged for some time in the immense work of diverting the Danube from its present course into a new bed, now nearly completed, which will bring the river half a mile nearer to Vienna, and open up to the capital, by this close connection with a great navigable stream, all the advantages which can be derived for commerce from so favorable a position.

It is intended to construct great docks, erect factories, warehouses, and counting-houses, along the banks of this new Danube, and so lay the foundation of an emporium which shall attract all the traffic of the river. The new Danube stadt is to spring up close to the Prater, consequently near to the exhibition-buildings; and the great rotunda is looked upon already as the future corn-market and warehouse of the new city, and in the construction of the machinery-hall its ulterior destination for warehouses and granaries has not been lost sight of.

This view of the case explains much of the apparent unnecessary expense which has been incurred by making the machinery-hall walls so immensely thick, and so much of the industrial palace a permanent construction.

\*Valuable maps, Nos. 5 and 6, accompanying this report show the improvement of the Danube and the location of New Vienna.

In regard to the system of drainage, it may be said that, owing to the fact that the land drains itself so easily, there is really no artificial system of land-drainage proper, but a complete system of tile-pipes carries off all the water from the roofs, boilers, and water-closets, and conducts it into the Danube Canal.

The drawings of this system of drainage I shall bring home with me.

## III.—GENERAL DESCRIPTION, PLAN, SURROUNDING GROUNDS.

This universal exhibition at Vienna differs most radically from all previous demonstrations of the same character, both in regard to the plans of the various buildings and the general arrangement. It will be remembered that in the Paris (1867) exhibition the two systems of grouping the articles to be exhibited, viz, the geographical and the systematic, were combined. When preparing the plans for this exhibition it was considered that the Paris arrangement was not entirely satisfactory, and that no one system could combine all possible advantages. Consequently it was determined to sacrifice that portion of the Paris arrangement which necessitated the juxtaposition of all objects of the same class. In this exhibition, therefore, the grouping geographically, or by nations, has taken precedence over the other, and the systematic grouping is only recognized by providing separate buildings for specific purposes, as in the cases of the machine-hall, art-gallery, and agricultural machine buildings.

The following are some of the principal reasons given by the general direction of this exhibition for erecting buildings upon the plan which has been carried out :

1. It provides direct railway communications to the very doors of the different parts of the exhibition-buildings.

2. It provides for the exhibition of machinery in a separate building from the rest of the articles exhibited.

3. The fine-art department is also kept separate, so that objects of great value are less liable to be injured by fire or other causes, and, therefore, artists and collectors are more willing to exhibit their best works.

4. The arrangement of the ground-plan is considered by the general direction to be such that it is very easy for visitors to find their way from the department of one country to another.

5. The design of the buildings is such that little or none of the lighting is done by means of glass in the roofs.

This is considered an important matter, first, because it is extremely difficult to make large glass roofs perfectly water-tight, as the experience of many previous exhibitions has shown; and second, because in the scorching hot summers of this climate it would be intolerable to admit the rays of the sun directly into the building.

Each of the above reasons is certainly very excellent in itself, and (possibly with the exception of the 4th) it seems to be generally acknowledged that the plan executed will entirely answer the objects for which it was designed.

It will be noticed, however, that the plan was not developed with reference to the systematic grouping of objects of the same class, and consequently fails in affording an opportunity to examine articles of the same kind, from different countries, when placed in close proximity.

The consequence is that if, for instance, I wish to compare the textile fabrics of the United States with those of China I am obliged to walk the entire length of the palace in order to see them both, and not only that, but I have to pass through every other variety of production in making the transit.

The arrangement adopted does show, however, and that most beautifully, the objects of each country collected together in single transepts, each like a separate exhibition in itself.

Thus it is very easy for the casual visitor to observe the productions



of each country without having his attention drawn away by too many surrounding objects; and, at the same time, the most characteristic productions of any one country are easily noticed on account of their predominance over the rest.

The exact arrangement of the industrial palace is shown in the large drawing, No. 203, accompanying this report, and it is known among engineers as the "gridiron" plan of the building.

During the last two weeks I have spent much time in and about this industrial palace, and, as during the first week, there were but few of the show-cases or objects for exhibition standing in the avenues, I shall speak of the interior of the building first as seen when empty, and afterward of the different effect with the objects in position.

When seen empty, I noticed that the proportions of width and height to length were such that the nave or central gallery did not appear nearly so long as I had been led to expect it would, and that it was very easy to take in its whole length at a glance from one end without the decoration at the other end appearing so small as to lose in effect. I noticed also that when walking in any of the transepts the distance to the nave did not appear long, so that by stepping out into the nave I could always tell immediately in what part of the building I was. The lighting of the interior of both nave and transepts is admirably managed, and this is acknowledged universally to be one of the best features of the building. While the windows are above the wall-space which is used by exhibitors, yet the width of both nave and transepts are not too great to prevent the light coming in on one side from properly illuminating the walls under the windows on the opposite side.

After all, however, the only architectural effect obtained is that from long avenues, respectively 83 feet 8 inches and 51 feet 1 inch wide, each flanked on either side by tall slender columns, placed 16 feet 2 inches apart, and supporting a cornice from above which spring the wrought-iron arches for the roof.

These columns are beautifully proportioned in themselves. They have light wooden pedestals and moldings, and plaster of Paris capitals and bases, the latter painted to resemble bronze, while the shaft of the columns, which is of timber and used to stiffen the iron lattice columns, is covered with tightly-fitting crimson canvas, adorned with spiral and straight lines in gold.

The cornice above the columns is also made of wood, and painted a creamy gray color, picked out in gold.

The roof-trusses are painted olive-green, and the roof-sheeting is carefully whitewashed, the latter being much better done than we are accustomed to see it in the United States. The effect from the row of crimson columns on either side is certainly very striking—in fact the redeeming feature of the entire decoration of the interior of the nave and transepts.

When looking down the nave toward the rotunda there is no fine effect produced in consequence of looking into the rotunda, because the large columns which support the rotunda are so placed that the passage-way from the nave into the rotunda, or half-gallery surrounding it, is even smaller than the nave itself.

I was much disappointed in the effect that I hoped to see here, as the arrangement is equivalent to dividing the whole building into three large divisions, viz: a center rotunda and two long naves, one on either side, each of which, as seen from the inside, forms a separate interior which in no way assists the others in an architectural point of view



In fact, the rotunda is so high and large that the nave-entrances look like little more than the ordinary doorways leading out from it.

So much for the effect when seen empty. During this last week many large show-cases of the most ornamental descriptions have been erected in both the naves and transepts, both along the side walls and directly down the center. The placing of high show-cases directly down the center of buildings, already narrow, has been most adversely criticised by many parties here, as it is completely destroying whatever vista there was from the form of the buildings, and it is feared will much confuse visitors as to their exact position in the building because they will not be able to see far in any one direction. Of course the favorite localities for the handsomest cases are right at the intersections of the transepts with the nave. Some of these show-cases are so large that they almost touch the roof, and are so wide as to completely close up the vista both down the nave and transepts.

The key to the whole exhibition is a simple one, however, requiring but the most elementary knowledge of geography to enable a visitor to tell about where he is.

The nave of the building runs as nearly as possible east and west, and the transepts north and south. The countries are then arranged according to their geographical positions on the surface of the earth.

North and South America occupy the extreme western end of the building; England and Western Europe come next, and so on until we reach the extreme eastern transepts, which are appropriated to China and Japan.

The final map by the general direction, showing the actual amount and locality of the space to be occupied by the different countries, has not been published yet.

It has been prepared, however, and I have the promise of copies for the commission as soon as it is issued.

It will be seen, from what I have already written, that the rotunda, which forms the central feature of the industrial palae, so far as its interior appearance is concerned, may be considered as a distinct part of the exhibition. In consequence of the great span of its roof, its magnificent circular corridor, and the excellent taste displayed in the decorations, it is already the great center of attraction.

This immense construction is the result of combining the genius of the best English engineers with the best architectural talent of Central Europe.

It was not to be expected, however, that two such elements should work perfectly harmoniously together, and the consequence has been that the rotunda, as built, is not exactly according to the design which either one thinks would have been the best. From conversing with architects and engineers connected with the work, I have been led to suppose that the engineers would have preferred to have left off the half-gallery or corridor formed by the nave dividing the two and passing around the base of the rotunda.

The result would have been that the rotunda would have appeared much lighter than it does at present, if seen from a near point of sight, but in return the handsome corridor, which is so admirable for the interior effect, would have been lost. If the main columns supporting the rotunda-roof had been made somewhat taller, then probably the effect would have been better even than it is. Certainly it would have improved the exterior appearance. It seems to me now that the rotunda-roof, when seen from the outside, does not do itself justice and produce



as much of an architectural effect as it would if it had been placed still higher above the adjoining roofs.

The Austrian engineers and architects, in turn, insisted upon the half-gallery or corridor, and the result has been one of the most strikingly beautiful architectural features of that kind that is to be found anywhere in the world.

It is much to be feared, however, that the interior of the rotunda will not be sufficiently well lighted, although that is an extremely difficult point to decide so long as so much scaffolding remains about the columns of the great lantern, thus partially closing up the only openings by which light enters the rotunda.

The finishing of the interior decoration will also most materially assist in making the general effect appear lighter than it does at present.

Many architects here think that a serious mistake was made in not providing more light for this building. It could easily have been done without introducing glass into the roof itself.

Accompanying this report will be found a considerable number of drawings, showing the handsome façades, and details of construction of the fine-art gallery.

Pavilion for amateurs, the jury pavilion, and emperor's pavilion, all of which, although exceedingly monumental in design, are executed in plaster or stucco finish.

I do not think any of these buildings sufficiently near completion for me to form a correct opinion as to what their final appearance and adaptability will be.

Also with regard to the machine-hall and agricultural-machine building, it would be useless to describe them until they are entirely finished and in use. The few drawings already in Philadelphia show the general forms of construction of the machine hall, and all further details I shall bring with me when I return.

Before closing this portion of my report, I would most respectfully call attention to the location on the ground of the principal buildings forming this exhibition, particularly with regard to the spaces left between them.

When the buildings were first located, it was considered by the general direction that ample space had been left on the intervening ground for all extra buildings that might be required, but experience has shown that it would have been far better to have allowed more.

The demand for building-sites on the exhibition-grounds has been continually on the increase as the 1st of May, 1873, has approached, and consequently the authorities have been much at a loss to know where to provide sites for the numerous buildings that different nations and private parties are desirous of erecting. The piece of ground between the Industrial Palace and machine-hall is now so densely built up that it resembles a new Swiss settlement, with the houses arranged to face the main buildings.

In order to obtain space, it has also been necessary to roof in all the open courts on the side of the Industrial Palace next the machine-hall, and I notice that lately some of the front courts are being treated in the same manner. Where such is the case, the roof over the court is so arranged as not to prevent the light from passing freely through the side-windows of the transepts.

The second point to which I would respectfully call attention may possibly be considered premature for consideration at this time, but the effect of the exhibition upon public opinion at large is so much influenced by it, that its importance cannot be overrated.



I refer to the decoration of the building. It makes no matter how useful and well adapted to its purpose a building may be, unless it appears well, it will be passed by with a minimum amount of attention.

I have noticed here, besides Austrians and Bohemians, many Italians, Russians, Turks, English, and other nationalities, represented among the workmen, each busy in his own peculiar way. Much of the decoration of this exhibition, therefore, has been done by skilled hands, who are acknowledged to be the best in the world in their several branches of industry. I trust that I am not putting the point too strongly by saying that unless better taste is displayed, both as regards the exterior and interior decoration of our Centennial buildings than is commonly to be seen in our streets, we need not to expect other than a ridiculous impression upon foreigners who will visit us in 1876.

My impressions in regard to the adaptability of the Vienna (or "grid-iron") plan of buildings to our requirements in 1876 have not been very much modified since I have seen the design executed.

It is exceedingly instructive to observe and study the immense amount of thought and labor which has been displayed here upon a plan which is in itself exceedingly difficult to treat effectively. Still, I sincerely hope that the United States Centennial Commission will succeed in erecting buildings that will combine both the geographical and systematical systems of groupings, and still preserve the advantages to be found here. If so, it will differ very radically in arrangement from the buildings of the Vienna Universal Exhibition of 1873.

#### IV.—STYLE OF THE BUILDINGS—MATERIALS USED AND DECORATION.

With the single exception of the main rotunda, all the buildings in this Vienna Exhibition may be embraced in two styles of construction and decoration, and the result obtained shows a similarity, both in manner and in finish, which runs through all the architectural work that is to be seen.

*First.* Buildings constructed in the Swiss Chalet style, viz: of wooden frame-work filled in with brick, and plastered on the outside, the frame-work showing on the exterior, and generally colored so as to make it very prominent.

These buildings display the most varied forms in their designs, the majority showing excellent taste and adaptability to the purposes for which they are intended.

This style of building is characteristic of the central part of Europe, viz: South Germany, Switzerland, and Austria, and is seen at this exhibition in all its glory. The main entrance to the exhibition, the railroad-station, all the covered ways, and almost all the buildings put up by private parties, are in this style. The general appearance of the smaller buildings of the exhibition, although displaying much sameness in the materials used and manner of building, is, nevertheless, very pleasing, because the designs are artistic and well adapted to their several uses.

The second mode of building is to use rough brick-work throughout for the principal parts, and then cover the whole exterior with what the Germans call "gyps," which is plaster, cement, or stucco. Zinc is used for roofing almost exclusively, and for very many of the large cornices. Where a particularly rich and expensive effect is required, colored slate is introduced, as in the roof of the jury-pavilion. The stucco, after drying, is colored to resemble the stone obtained from the great quarries near Paris, and the zinc roofs are left unpainted. The stucco



finish admits of the most elaborate ornamentation, being introduced at a small cost, and produces an effect which is wonderfully beautiful and apparently monumental, so long as one forgets that it is all a sham, and that the columns, cornices, window-architraves, balustrades, vases, and statuary are made of a substance but a little better than common plaster. All the superb façades of the industrial palace, jury-pavilion, and emperor's pavilion are executed in this stucco-finish on rough brick walls. The designs are throughout grand and monumental.

Particularly beautiful are the corridors, with groined arched roofs, and the main entrances, with large memorial tablets above the arches, and the medallions between the principal columns. The main columns supporting the rotunda are also incased in a wooden frame-work, with a stucco finish.

The proportions of these columns are admirable and imposing in the extreme, and the whole corridor is considered one of the best examples of interior decoration on a large scale that will be found anywhere. Such excellent results have only been obtained by employing the very best talent in that line. Much of the very best of the interior decoration of the industrial palace is owing to the invention of an Italian, M. Bossi, of Milan, who discovered how to paint patterns on common canvas in such a manner that at a little distance the effect thus produced could not be distinguished from real painting. All through last summer thousands of square yards of this material were being prepared at the establishment of M. Bossi, near Vienna. The canvas when finished costs from 7*d.* to 1*s.* per yard, according to the color, and has this great advantage over paper-hangings, that it has no tendency to bag when applied to damp walls, and consequently can be used as soon as the structure is finished, without waiting for it to dry. All the columns and cornices throughout the entire industrial palace are decorated with this painted canvas, and the entire ceiling of the immense rotunda is lined with it. The patterns printed on are sometimes in gilt, and sometimes in bright colors; and the canvas in certain cases is stained a bright crimson. Much of this ornamentation is not put on yet, so I speak only of the more substantial part.

It will be extremely important, in designing our Centennial buildings, to employ the very best talent in the designing and decoration, as very much of the success of the whole exhibition will depend undoubtedly upon the effective and monumental appearance of the buildings.

With our varied-colored bricks, tiles, and slate, and proper introduction of terra-cotta, and cast and wrought iron work, we ought, however, to produce an equal monumental effect, and be much more true to the construction, and consequently improve upon the immense stucco shams which are so characteristic of this exhibition.

#### V.—METHOD OF CONSTRUCTION AND TIME OF ERECTION.

First, in regard to the great rotunda: This consists of an immense conical wrought-iron roof, supported on thirty-two wrought-iron columns. The columns rest on base-plates, laid on concrete foundations.

These columns are box-shaped in section, being 24.4 meters high; at their center 3.05 meters deep, and 1.24 meters wide. The boxing is not continuous throughout, seven bays or openings having been left in each of the longer sides.

They are stiffened by angle-irons running vertically, and by bulk-heads of iron lattice-work horizontally.

The head and foot of each column are made stronger than the body,



the foot being plated up 1 meter in height, and having bulkheads. On two sides of the columns are plate-iron brackets 14.1 meters above the foot, for the springing-line of the arches which connect the columns. The plates used in these columns are 10 millimeters thick, the foundation-plate being 13 millimeters; angle-irons, .IX.IX.013 meters; and the rivet holes 18 millimetres in diameter.

The workmanship of these columns, and particularly on some of the main radial girders hereafter to be described, is not as good as that turned out at our best bridge and roof works in the United States.

The conical wrought-iron roof consists of three principal members or sets of members :

1st. A great tension-ring, which surmounts the heads of the columns.

2d. A series of radial girders inclined at an angle of nearly  $31^{\circ}$  with the horizon, which are strongly riveted at their lower ends to the tension-ring, and exert an outward horizontal thrust which is resisted by the ring.

3d. A top compression-ring, to resist the inward thrust of the radial girders at their upper ends. Each of the above radial girders has other secondary duties to perform not mentioned above, and is strengthened by a series of five ring-girders, placed between the different radial girders at similar distances up the roof. The radial girders taper from, say, 6' 0" at the bottom to 2' 0" at the top.

The entire under side of the roof is lined with wrought-iron plates—thick, made to lap, joint, and be riveted and calked. It will be noticed that the entire exterior of this roof is therefore a series of immense troughs, in which I am told snow collected last winter as much as four feet deep.

The lining-plates do not come in contact with ring-girders, however, at every point, because of the overlap, so that there are  $\frac{1}{2}$ "X say 2' 0" spaces left to allow the rain to run down under the ring-girders to the cornice at the main tension ring, and thence down through the posts to the ground. Some engineers consider this an advantage, as it prevents the snow from accumulating on one part, and keeps it more or less distributed over the roof in these troughs. I myself should doubt exceedingly the permanent efficacy of such an arrangement if used in the United States, and should expect that the chances of leakage into the building would be very much increased thereby.

The effect of the direct rays of the summer's sun upon such an immense surface of plate-iron immediately exposed to it remains to be noticed yet; also whether the seams, which are calked and white-leaded, will remain tight enough to hold snow-water, if it should collect to any considerable amount, remains to be seen. At present the roof appears to be perfectly water-tight. I was on it immediately after a heavy rain, and the drainage seemed admirable.

The exact method used in putting up the main columns which support the roof, and also that of erecting the roof itself, was one decided upon by the contractor who built the rotunda. The method proposed by Mr. Scott Russell, the engineer, was not adopted, and the consequence was that an immense extra expense for scaffolding and equipments was incurred by the director of the exhibition. Mr. Russell's method I shall give in my final report; the one actually employed was as follows, being thus graphically described by Mr. Geo. C. W. Holmes, who is Mr. Scott Russell's engineer and representative on the ground.

For the erection of the columns a strong circular scaffold, 8 meters high, was provided, which encircled the entire rotunda. From the floor of this scaffold were suspended sixty-four powerful screws, viz: two to each column. These latter arrived in segments, the heads coming first and the bottom segments last. The heads were then



placed in position on the concrete foundations, and were bound together by the wrought-iron girders, which form the supports for the great interior gallery round the base of the dome. To the outer sides of these segments were bolted strong wrought-iron brackets, to which were fastened links suspended from the above-mentioned screws. All the sixty-four screws were then turned simultaneously by means of long wooden levers, the column-heads of course following them, and rising, for each complete revolution of the levers, through a distance equal to the pitch of the screws. This operation was continued till the column-heads were raised high enough to allow of the next segments being pushed in underneath and riveted to them. The wrought-iron brackets were then removed from the heads and attached to these second segments, the screws being lowered so as to allow of the links being attached to the brackets in their new position. The operation of lifting was then repeated just as before, till the third segment could be thrust in, and in this way the whole of the columns were put in place. In the mean time, another great circular scaffolding was being erected in the center of the building, and was made wide and high enough to allow of the platform of the great lantern being built upon it. When the scaffold and platform were completed, the radial girders were brought in segments into the interior of the building, and were deposited and riveted together on the floor, every one exactly underneath the position which it was eventually to occupy. They were then raised each in one piece, by means of cranes, to the required height, their upper ends being riveted to the ring-platform, while the lower extremities were made fast to the column-heads.

There being nothing very peculiar about the construction or erection of the other parts of the principal buildings, I shall not describe them in this report.

As to the time occupied in erecting the various buildings, the accompanying set of photographs, published under the authority of the general direction, is the best record we can have, as each one is dated, and shows the exact state of the work at the time.

#### VI.—WATER-SUPPLY AND FIRE DEPARTMENT.

Very few previous exhibitions, if any, have had such extensive arrangements made for the water-supply as this in Vienna. The Prater itself affords unusual facilities to proprietors of refreshment-saloons and to exhibitors in annexed buildings, as it is only necessary to sink a tube-well at any part of the grounds to get an abundant supply of good drinking-water, purified by passing through the Danube gravel. But for supplying the hydraulic motors, fire-plugs, fountains, &c., three systems of service have been provided. Of these the first consists of two steam-pumps, constructed on the system of M. Prunier, of Lyons, these pumps being erected at the eastern end of the machinery-hall, and being capable of supplying 20,000 cubic feet of water per hour. The principal object of these pumps is to supply the machine-hall, but as this demand will absorb but a small portion of the quantity which the pumps are capable of delivering, there will remain from this source a considerable supply of good filtered drinking-water for other purposes.

The second system of water-works is erected in the western end of the machinery-hall, for the purpose of furnishing the necessary water for the fire-plugs in the buildings, for the hydrants, the fountains, hydraulic motors, &c., the whole being worked upon the high-pressure system. The reservoir belonging to this system is placed upon an iron tower 110 feet high, situated between the exhibition-palace and the machinery-hall, and it feeds a net-work of pipes of the aggregate length of about nine and a half miles, supplying the whole exhibition buildings and grounds with water. There will be fixed, in connection with these pipes, about one hundred fire-plugs in the buildings, and nearly one hundred and fifty hydrants in the open air. The steam-pumps are capable of feeding the high-pressure work with 10,000 cubic feet per hour. Finally, a third system of water-works is established chiefly for



the purpose of feeding the six large fountains placed in front of the exhibition-palace. For this purpose a well is sunk near the jury-pavilion, by means of a steam-engine constructed by Sigl, the well being 12 feet diameter, and is sunk 20 feet deep below datum. From this well the water will be raised by two steam-pumps, and partly forced to the fountains and partly used for drinking and other purposes. This system will be capable of discharging about 10,000 cubic feet per hour, and will be connected with the high-pressure system in order to aid the latter in case of fire. In the aggregate, the water-works erected for the service of this exhibition will be capable of supplying 40,000 cubic feet of water per hour. Watch-houses, each containing a fire-engine complete, with the necessary contingent of men, have been erected at numerous points on the grounds. In addition to this the principal buildings are so constructed that they can be easily cut in two, and thus, if a dangerous fire should arise, it can be isolated and confined to that portion of the building in which it originated. In due course of time I shall have drawings of this entire water-service.

The following information with regard to our own Belmont Reservoir, near George's Hill, may be of use in this connection. I make the extract from a letter written by Mr. William H. McFadden, chief engineer of water-department, dated Philadelphia, March 10, 1873, in answer to a note I wrote him just before leaving home. "The total pumping capacity of Belmont Works is at present 10,000,000 gallons per diem, and will during the coming season be increased to 18,000,000 gallons per diem of twenty-four hours. The storage capacity of reservoir at George's Hill is 40,000,000 gallons. Average daily quantity supplied during 1872, about 4,000,000 gallons."

#### VII.—VENTILATION AND SANITARY ARRANGEMENTS.

In regard to the ventilation of this industrial palace, nothing can possibly be imagined more perfect and satisfactory.

The simple fact of having the immense rotunda conical in shape, and open at the top, and at the same time located in the middle of the nave, which has all the transepts opening into it, has resulted in making the whole building one huge self-ventilating apparatus, which operates as follows:

The lantern of the rotunda is open between the columns, and acts as an immense chimney to draw the warm air from the large circular hall below.

This hall in turn is supplied by air from the nave or main corridor, and the nave from the various transepts.

Several times when I have been standing on the balcony around the foot of the lantern, the draught through the opening from the hall below has been strong enough to blow my handkerchief straight out when held up by the corners.

In regard to sanitary arrangements, water-closets, &c., I shall have definite information when they are finished and have been tried by use.

#### COST OF BUILDINGS AND PRICES OF MATERIALS.

The actual cost of the Vienna exhibition buildings and improvements has far exceeded the original estimates. With regard to several of the principal items of expense it is not difficult, however, to account for this increase, and the one item alone of the rotunda-roof may be



cited as an example; as the Austrian engineers more than doubled its weight in wrought iron over the amount estimated as necessary by Mr. Scott Russell. This increased weight in the roof necessitated heavier columns and foundations, and increased the cost in proportion. The result of the various changes, modifications, and additions concerning the first plans has resulted in the original six millions of florins, which the Austrian Reichsrath or Parliament voted for the purposes of the exhibition, being finally increased to sixteen millions of florins.

At the present stage of the exhibition, while so much work is still going on, it is of course impossible to decide what the *actual cost* will be, but it may be useful to know that, in the opinion of those connected with the work, it is now generally conceded that when all is complete and finished it will be found that this Vienna universal exhibition has cost in round numbers not much less than twenty million florins, or say ten millions of dollars.

The following are some of the prices actually paid for several of the most important materials used in the various buildings. I give the amounts in the same coin as they have been given to me by those engaged in the work:

FIR TIMBER—5 pence per cubic foot.

This timber is used in these buildings in about the same way we would use white pine.

PILES—including driving—90 kreutzers per running foot.

These are about 10" diameter at the head, and penetrate say 10 feet or more, depending upon location.

BRICKS—(not laid)—from 50 shillings to 60 shillings per 1,000.

These bricks are much larger than ours, being  $11\frac{1}{2}$ " by  $5\frac{3}{4}$ " by  $2\frac{7}{8}$ ", and are very rough at that. Hard bricks, such as we use, are not liked by the workmen here, as they are so frequently required to round off the edges to make the bricks take the plaster or stucco-finish. If the bricks are not comparatively soft, the workmen will not use them.

CANVAS—Plain round,  $\frac{3}{4}$  yards wide, 30 kreutzers per yard. Colored ground,  $\frac{3}{4}$  yards wide, 60 kreutzers per yard.

It will be remembered that an immense amount of canvas has been used in these buildings. The entire under side of the roof of the rotunda is lined with it, almost every column in the interior is cased in it, and every interior cornice is decorated with it. It is made in England and printed near Vienna.

WROUGHT-IRON.

The first contracts were at £20 per ton, manufactured, delivered, and directed, but afterward, when iron went up in price, they were made at £25 per ton. This iron is from Belgium, and was manufactured at Duisburg, on the Rhine.

There is no cast iron used in the buildings worth mentioning, the amount being so small.

#### VIII.—RAILWAY AND CITY COMMUNICATION.

One of the principal defects in the arrangements in connection with previous exhibitions has been the lack of adequate direct railway communication to the very doors of the various buildings, and special attention has been paid to rectify this defect here at Vienna.

The "Stadtsbahn" (State Railroad) and the "Nordbahn" (North Railroad) are the two principal lines which reach Vienna in the vicinity of the Prater, (see maps Nos. 2, 3, 4,) and it has been by joining these two lines by means of a *connecting railroad* through the Prater that imme-



diat communication has been made with all the railroads of the Austrian Empire. This connecting railroad was built in the spring of 1872. Where it enters the exhibition-grounds it spreads out into some dozen branches or sidings, one or more of which runs past the outside of each of the main buildings, and, by means of small turn-tables, trucks containing building-materials or objects for exhibition can be conveyed directly to the spot where they are wanted. The tracks are laid with the top of the rail about 4" below the floor-level, and they will be floored over during the continuance of the exhibition. The principal passenger-station for the exhibition is located just back of the center of the machinery-hall; and covered ways connect it with the principal buildings. I have made arrangements to obtain from the chief engineer of railroad communication official drawings of these connections throughout, and will have them in course of time.

Yesterday morning I understood there were three hundred cars waiting to be unloaded for the industry-palace. I went out in the afternoon to see the result, and found the arrangements were so simple and satisfactory that all was done with perfect order and dispatch. The warehouses for storing empty boxes are located in various parts of the ground, and others are being built at the lower end of the Prater, some distance from the industry-palace. I see a large number of empty boxes are now standing in the space back of the machine-hall, waiting for transportation to the warehouses. This storing of empty boxes during the exhibition is considered a very important matter by the authorities here, and provision has been made accordingly. It will be remembered that at Paris much confusion, delay, and serious trouble was experienced, after the exhibition closed, in finding the boxes to repack exhibited articles. The fee charged here for storing packages is on an average about 40 cents per cubic meter, and workshops are provided for repairing them at a moderate charge. In regard to the method of rapid transit between the city and the exhibition, I am surprised to see so little provision made. No line of street-cars extend nearer than the Prater stern, (see maps Nos. 2 and 3,) and but two lines of omnibuses are now running out from the Stephen platz, or center of the city, to the industrial palace every two minutes, fare 7 cents. The fact is that the Prater is near enough to the heart of the city for the mass of the people to walk there, and fiacres, or light one and two horse carriages, will be much in demand for those who prefer to ride. The impression upon a stranger at this time is that the means of conveyance out to the exhibition is inadequate to what will be required. What may be done after May first remains to be seen.

VIENNA, AUSTRIA, *April 28, 1873.*

I mentioned in my last letter on the 17th instant that I expected to meet again Mr. Scott Russell, for the purpose of laying before him my maps and plans of Fairmount Park and Philadelphia, and obtaining from him any suggestions that he might see fit to offer. I have done so, and found that Mr. Russell took great interest in our undertaking, spending the best part of two days in taking me over his great rotunda here, and in discussing various points with regard to our own exhibition in 1876.

In general terms the principal points suggested for consideration by Mr. Russell may be stated under the following heads; but I must preface by saying that during our two days' intercourse I was able to take many notes from him which are too long and technical to repeat in a communication like this, but which I hope may prove of use from time to time to the commission.



Mr. Russell suggested as follows :

1. The nature of the site that has been already determined upon in Philadelphia decides that we can much better erect a main building or industrial palace which is more or less circular in form than any other.

2. That in designing such a building it is perfectly possible to retain all the advantages of the Paris system of classification, and at the same time avoid the objectionable features of that exhibition.

3. That when planning the building, if we can so arrange it that all parts may be seen from some one central point, we shall produce a result that will be more satisfactory in use, and infinitely finer in effect, than anything of the sort that has yet been accomplished.

4. That when working up the drawings, great care should be taken to use repeatedly similar pieces in the construction, and avoid as much as possible a variety in the parts.

There is not one of the above suggestions which is not of the greatest importance when considering what our buildings should be, and if any one of them should be overlooked, just in that respect will our building (as a whole) prove a failure. The London exhibition of 1851 was particularly good with regard to the points mentioned in the third and fourth suggestions, and will always be remembered on account of the good features therein mentioned. The Paris exhibition was lamentably deficient in both the third and fourth respects, the third in particular, but will always be remembered on account of its excellent system of classification.

This Vienna industrial palace is, of course, too new yet to tell what the general impression it may produce upon the world at large may be, but this much is certainly self-evident, that if the great rotunda, which furnishes the only grand view to be seen, were taken away, the remainder of the industry-palace would not be considered worthy of notice outside of Vienna.

How much superior, therefore, to all these previous exhibitions will ours be when we combine all the above four principal considerations. We must not fail to produce the best industrial palace yet built.

After considerable trouble, I have finally succeeded (to-day) in procuring, here in Vienna, some valuable drawings of previous exhibitions, viz: London, 1851; London, 1862; Paris, 1855; and Paris, 1867. It was a most agreeable surprise to me to be able to get these drawings here, as I expected to have to hunt them up in Paris and London. They will certainly be of much interest to our commission.

I have been at work in all directions for them, and finally obtained them through Mr. August Kostlin, royal inspector of the Stadtsbahn and editor of the *Allgemeine Bahnzeitung*, the principal engineering-journal of Central Europe. Mr. Kostlin has therefore assisted me very materially.

Since my last communication to you, I have also had an interesting interview with Mr. Hofrath Eichler, the engineer who designed and superintended the construction of all the railroad-communications in the immediate vicinity of the exhibition. He informed me that his system of tracks was arranged for the unloading of 250 wagons per day, and was found to be perfectly satisfactory in every respect from the commencement of the work in the Prater up to the 15th instant, but during the last two weeks it has proved entirely inadequate to the requirements. Upward of 1,300 wagons are now standing in the vicinity of Vienna, waiting to be brought into the Prater. By working all night, in order to get the wagons into position, so that exhibitors may unload their goods in the morning, and by removing the empty boxes during the



latter part of the day, the railroad officials manage to handle some 300 cars under the most favorable circumstances; but it would take at least five days to unload all the wagons now waiting in this neighborhood. It is, therefore, very evident that, as wagons are still arriving from a distance, it will be nearly (if not quite) June 1 before all articles for the exhibition are finally located in their proper places.

VIENNA, AUSTRIA, *May 9, 1873.*

I am still following up my intention to see all the leading men engaged upon this work here, and during this last week have had a very suggestive interview with Mr. Hasenauer, the chief architect, the gentleman to whom Baron Schwarz is indebted for the admirable designs and decorations which make up the façades of the several buildings. Mr. Hasenauer made one very strong point in particular, with regard to the advantages this Vienna "gridiron" plan of building has over previous industrial palaces, of the truth of which I have myself observed ample demonstration during the last three weeks. Mr. Hasenauer remarked that, owing to the great number of large-sized doors, each leading into separate departments of the building, the various countries have been able to work separately, simultaneously, with satisfaction to their various commissions, and also as expeditiously as the delivery of goods would allow; whereas if the building had been constructed with as few main entrances as in Paris in 1867, the crush would certainly have damaged many articles. His remark was certainly very true. Mr. P. Cunliffe Owen, secretary of the British commission, also tells me that in London, in 1862, it was found necessary at the last moment even to cut holes through the wall in some places, in order to get articles into their proper positions, the doors not having been made either large or frequent enough for the requirements.

Mr. Owen has also very kindly given me copies of the plans and drawings issued by the British commission for the use of their own exhibitors. These, of course, only apply to the British departments in the various buildings, but they are admirable to show how a great country, which has given two exhibitions, and has been well represented in many others, has arranged to transact the necessary business in the best way. The British commission here is certainly most admirably organized. Their plan of the water-pipe service is, in my opinion, much the best that has been issued by any parties. One of their official catalogues I sent by mail to your address in Philadelphia. It left Vienna on the day before it was issued to the public.

VIENNA, AUSTRIA, *May 26, 1873.*

The exhibition here presents at this time a much more favorable appearance than it did two weeks ago, both as regards the internal arrangements of the various buildings and the general appearance of the surrounding grounds. The different exhibitors have had time to rearrange their articles, which were so hurriedly brought into position for the opening ceremonies, and as each day advances more order seems apparent in every department. Although the rotunda and main gallery would appear at first sight to be entirely finished, that is, with all the cases and exhibits in their proper positions, and very many of the articles are packed together as closely as the space will allow, yet every day brings something new into prominence. Many of the transepts and covered courts, however, still show unfinished cases, unpacked boxes, and workmen busily engaged in getting things into shape. I regret to be obliged to say that the American Department in the in-



dustrial palace is still among the latter, and that even to-day the passage-way from the main gallery into the American transept is barricaded with strips of wood nailed across from post to post, so that none but exhibitors and interested parties are admitted. Some little seems to be done, however, every day, and I presume that eventually we shall have a satisfactory display. The prolonged unsettled state of affairs in the American department is very much to be regretted, as it has placed, I fear, the interests of our Centennial in a false position before many people who do not draw any distinction between the different American commissions represented here in Vienna, but judge of all by the one accredited by the Government to the exhibition.

I leave Vienna this week, and hope to be in Paris between June 15 and 20, and in London by June 30.

Yours, very respectfully,

HENRY PETTIT.

---

## IX.—FINAL REPORT OF MR. HENRY PETTIT, SPECIAL AGENT TO VIENNA EXPOSITION.

PHILADELPHIA, *August 11, 1873.*

DEAR SIR: I have the honor to present to you my final report on the structures used for the Vienna universal exhibition of 1873. I have also arranged, for reference, a short statement giving valuable data concerning the most important of previous English and French exhibitions. Taking these in connection with my special reports, dated Vienna, April 4, to May 26, inclusive, I trust you will find some information that may be of use to your committee.

I am, with great respect, your obedient servant,

HENRY PETTIT,

*Special Agent United States Centennial Commission.*

Hon. D. J. MORRELL,

*Chairman Executive Committee*

*United States Centennial Commission.*

---

## REPORT.

An international exhibition, such as that now in operation at Vienna, may be said to resemble in its operation a series of smaller exhibitions for specific purposes, following each other in rapid succession for a period of say six months, during which time an immense central exhibit of the products of all nations is also being held in an industrial palace, a machinery-hall, and numerous annexed buildings. It will at once be obvious, from this fact, that almost every conceivable interest may be brought into connection and be made to take part in the ultimate success of a universal exhibition; and it is also self-evident that in order to insure ultimate success the various departments must be placed under the control of those who are fitted for the work either by natural ability or previous experience.

Every important universal exhibition thus far given by the leading nations of Europe, it will be found, has proven itself, in the end, to be of greater magnitude than its predecessor, and each general management of previous large exhibitions has endeavored to prepare itself for



the great work by carefully examining all that has been done before. The United States Centennial Commission commenced its work with precisely this same intention on the part of the executive committee, and, as they have more information and greater resources than any previous body in a similar position, it is most natural to expect that the Philadelphia exhibition, on the occasion of the Centennial, will be as satisfactory as any that has thus far been held.

If we have understood our mission to Europe aright, its object has been to assist the executive committee in obtaining useful information with regard to the technical questions involved in the engineering and architectural features of previous exhibitions, especially Vienna, 1873; and we would respectfully call attention to what will be at once acknowledged in this connection, viz: that the *most* valuable and interesting portion of such information will *not* be found on the body of this report, but in the engineering and architectural works, translations, papers, drawings, photographs, lithographs, and other illustrations accompanying it.

For the purpose of giving some faint conception of what has been done in Europe with regard to exhibitions, the following partial list of the most remarkable will be of use: The first industrial exhibition was held in France in 1798. The first international industrial exhibition was the one in Hyde Park, London, in 1851. France, at various places, in 1798, 1801, 1802, 1806, 1819, 1823, 1827, 1834, 1839, 1844, 1849, 1855, 1867. Belgium, at Ghent, 1820. Prussia, at Berlin, 1844. Austria, at Vienna, 1846, 1873. England, at London, 1851, 1862, since become annual; Birmingham, 1849; and at numerous provincial cities. Bavaria, at Munich, 1854. Holland, at Amsterdam, 1859. Ireland, at Dublin, 1829, triennial; 1865, Winter Garden. Russia, at Moscow, 1872.

It is satisfactory to observe, however, that nearly all the essentially good points worthy of study concerning the buildings used on the above-mentioned occasions will be found embodied or suggested by the constructions used for the three largest and most successful, viz: London, 1851; Paris, 1867; and Vienna, 1873; and at the same time not omitting to examine London, 1862, and Paris, 1855. The Sydenham Palace may be considered as a second edition of the original 1851 palace, "*enlarged and revised*," and the Alexandra Palace, Muswell Hill, as ditto of the exhibition building of 1862. Each of the three most successful exhibitions above mentioned had buildings and arrangements radically different from each other, both as to general plan and details of construction, as to external appearance and internal working. Each exhibition was planned in a manner considered by the management at the time to be best suited to the site and requirements of the occasion, and each accomplished in a greater or less degree what was desired.

We have arranged for reference some general data with regard to each of these five exhibitions, more particularly for the purpose of showing their relative sizes and the cost of the several constructions.

#### X —LONDON, 1851.

The first private meeting held on the subject of this exhibition was at Buckingham Palace, on June 30, 1849, and the exhibition was opened to the public on May 1, 1851, the intermediate period being one year and ten months. It is interesting to observe from some contract drawings accompanying this report, that the actual work upon the buildings



proper must have been done between July 1, 1850, and May 1, 1851—ten months. (Query, How much can the United States do, twenty-three years later, for her first great exhibition, in two years?) The site for the building in Hyde Park was a rectangular strip of ground containing about 26 acres, and approximately 2,300 feet long by 500 feet wide. The total area of ground-floor in the building was 17.8 acres, and that of the galleries 5 acres.

It was built principally of cast and wrought iron, glass, and wood, great saving of both time and money being accomplished by simplicity of details and re-duplication of parts. The total quantities used were as follows:

Cast-iron .....	3,500 tons.
Wrought-iron .....	550 tons.
Glass .....	896,000 superficial feet, and weighing 430 tons.
Wood .....	600,000 cubic feet.

The cost of this building and its fittings was £170,000, or say \$850,000, being about 3 shillings 5 pence per square foot of superficial area covered. It must be remembered, however, that the contract under which the building was erected did not provide for its absolute sale to the royal commissioners, but was for “use and waste only.” After the exhibition closed, the building itself remained the property of the contractors. Had it been otherwise, the total cost would have been increased at least £100,000. The characteristic features of this building, which excited universal admiration and wonder at the time, were the “airy lightness of the whole structure” and the superb vistas afforded by a nave 1,800 feet long, 72 feet wide, and 64 feet high, intersected near the center of its length by a transept 408 feet long, 72 feet wide, and 108 feet high, to the crown of the semi-cylindrical roof.

Accompanying this report will be found the following books and drawings, &c., having reference to this building:

1st. A complete work called “Das Grosse Industrie-Ausstellungs-Gebäude, in London, 1851,” published by Förster, in Vienna, giving text and drawings of the plans and details of construction of the building.

2d. A set of sixteen lithographs from the private collection of Messrs. Vincent Brooks, Day & Co., London, showing the various contracts entered into by the royal commissioners when carrying out the work.

3d. A set of nine large colored lithographic perspectives, showing both exterior and interior views of the various parts of the building as it appeared on different occasions.

4th. A section of one of the parliamentary maps, showing Hyde Park and surroundings.

#### XI.—PARIS, 1855.

It is extremely difficult to convey a correct idea of this exhibition without referring to illustrations of some kind, owing to the fact that the buildings varied in form and construction and were irregularly located on the ground.

The following data will, however, serve our present purpose: The principal edifice was an extensive rectangular building, 820 feet long by 360 feet wide, exclusive of the projections, in which were the stairways. The whole building covered about 8 acres of ground. It was situated on the south side of the Champs Elysées, and is now known as the Palais de l'Industrie. It was erected by a company in 1852 to 1855, and was intended to be a permanent construction. It therefore affords an example of how the French people erected a permanent memorial-building as it were, in connection with a universal exhibition. It



was built of stone, has galleries around the main exhibition-hall, and roof of iron and glass. The present director of the building told me that experience had proven a great mistake to have been made in this latter respect, by providing too much glass and over-head light, and that much trouble had been experienced in consequence. All the other buildings used for this exhibition were temporary in character, viz :

An annex for machinery, 4,000 feet long by 85 feet wide, covering about 7.8 acres. This building was not expected to be so ungainly in proportions when the exhibition was first projected. Its greater length was essential to afford space that was required as the work advanced.

A circular building, 330 feet in diameter, known as the panorama rotunda, covering about 2 acres.

A palace of fine arts, of irregular plan, located at a considerable distance from the industrial palace, and covering over 4 acres.

The cost of these buildings was, so far as can be known, as follows :

	Francs.
Palace of industry .....	12, 500, 000
Machinery annex .....	2, 602, 000
Rotunda and gallery .....	607, 000
Fine-arts building .....	1, 051, 700
Supplementary construction .....	105, 800
Total .....	16, 866, 500
Say \$3,373,300.	

Accompanying this report will be found the following sources of information with reference to this exhibition :

The text and atlas of the “Allgemeinen Bauzeitung ” for 1856, giving plans and details of the various buildings.

A collection of ten lithographs of various sizes, giving exterior views of the whole exhibition, and interior views of the palace and machinery annex.

LONDON, 1862.

The principal part of the ground upon which the buildings for this exhibition stood was a tract about 16 acres in extent, which had formed a portion of the site purchased at South Kensington for the exhibition of 1851.

The main edifice was in general outline a rectangle, 1,150 feet by 650 feet, but with greater width of 750 feet at the ends. It covered an entire area of 17½ acres, and was intended to be permanent in its construction. When preparing the design, provision was made to include the picture-gallery, and care was taken to make the whole arrangement suitable for future international exhibitions. The exterior walls were built of brick-work, and hollow cast-iron columns were used for the interior supports. The roof had both wooden and iron principals, and included two octagonal domes of 160 feet diameter each, with 260 feet external height to the top of the finials.

Adjoining this permanent building were two temporary annexes for the machinery department, covering an additional area of 7 acres, which, taken in connection with the main building, made the total area 24½ acres. These buildings inclosed on three sides the Royal Horticultural Society’s Gardens.

In the principal structure the most impressive interior effect was obtained from the nave, 800 feet long, 85 feet wide, and 100 feet high to the ridge of the roof, over each end of which rose a dome 160 feet in



diameter and 200 feet clear interior height. These domes were at that time the largest ever constructed—St. Peter's, at Rome, being  $157\frac{1}{2}$  feet, and St. Paul's, at London, 112 feet. The dome of the Capitol, at Washington, has 94 feet  $8\frac{1}{2}$  inches interior diameter, and clear interior height of 180 feet 3 inches. The top of the figure of liberty is 287 feet  $5\frac{1}{2}$  inches above the ground at east front of the building. The domes on the London 1862 exhibition-building formed the most difficult and expensive part of the whole work. They weighed 120 tons each, and required an immense amount of timber-scaffolding.

LIST OF SOME OF THE QUANTITIES USED IN THIS EXHIBITION.

Brick .....	17, 250, 000
Cement and plaster, bushels.....	47, 105
Cast-iron, tons .....	4, 953
Wrought-iron, tons.....	2, 269
Timber, cubic feet.....	439, 178
Timber, lineal feet 9 inches by 3 inches, in plank, battens, &c.	2, 238, 722
Glass, superficial feet.....	667, 542
Stone, cubic feet.....	6, 877
Stone, superficial feet 6 inches thick and under.....	62, 831

Owing, however, to the omission of any expensive ornamentation, the actual cost was exceedingly low for the amount accomplished. The following are the principal items:

Contractors for the buildings.....	£320, 680
Designs, drawings, and superintendence .....	8, 323
Roads and approaches.....	13, 359
	<hr/>
	342, 362

The total cost of the exhibition, including expenses during the period it was open, was £459,637—say, \$2,298,185.00.

Accompanying this report will be found the following, having reference to this exhibition:

A general plan of the entire exhibition and grounds, with the royal commissioners' report.

Ditto, with further information in the "Allgemeinen Bauzeitung," Vienna.

A set of three large lithographs, giving prospective views of the building from Royal Horticultural Society Gardens, &c.

A set of four rare photographs, showing the interior. A most valuable description of the technical work involved in this exhibition will be found in "Captain Phillpott's lecture on the construction of the building," reprinted with additional matter as Appendix No. V., in the report of the commissioners for the exhibition in 1862, published in 1863.

XII.—PARIS, 1867.

This exhibition was nearly four times as large as any that had preceded it, and was much more comprehensively organized." As, however, the general features of the constructions are so perfectly familiar to all parties interested in enterprises of a similar nature, we propose in this place simply to give a few data for comparison. At the end of this report will be found stated some of the many important considerations which this remarkable exhibition suggests.

The Champs de Mars was rectangular in outline, being 3,375 feet by 1,545 feet—an area equal to 119 acres.

The longer axis of the building.....	1, 608 feet.
The shorter axis of the building .....	1, 247 “
Length of straight galleries between the semicircular ends .....	360 “
Circumference of the whole building .....	4, 800 “
Total area within the outer limits of the building.....	37. 8 acres.
Of this the center garden occupied.....	1. 5 “
Amount remaining under roof.....	36. 3 “

This area under roof was distributed follows:

		Acres.
Promenade around the center garden, 17 feet wide, covering...		. 48
1. “Gallerie de l’histoire du travail”... 28.....do.....do.....		. 88
2. Gallery of fine-arts .....	49.....do.....do.....	1. 38
3. Corridor for the liberal arts .....	20.....do.....do.....	. 83
Passage-way.....	16.....do.....do.....	. 72
4. Corridor for furniture .....	76.....do.....do.....	3. 9
Passage-way.....	16.....do.....do.....	. 92
5. Corridor for textile fabrics .....	76.....do.....do.....	4. 9
Passage-way .....	16.....do.....do.....	1. 1
5. Corridor for raw materials.....	76.....do.....do.....	5. 6
7. Gallery for machines.....	115.....do.....do.....	10. 4
Gallery for restaurants.....	33.....do... ..do.....	4. 89

The area of the park and reserved gardens around the industrial palace was 81 acres.

The area of the Island of Billancourt, used for the trials of agricultural machines, was 52 acres.

TIME.

An imperial decree placed the work under the direction of an imperial commission of sixty members in June, 1865. The ground was given up by the government, September 28, 1865. The first iron pillar was raised April 3, 1866. The work was *not* entirely finished at the time of the opening ceremonies, April 1, 1867.

COST.

The total cost of the exposition-building was 11,783,024 francs, say \$2,356,605.00.

This was at the rate of 7 francs 14 centimes, or say \$1.43 per square foot of surface covered.

The expenditure was for specific purposes as follows:

Construction of the palace.

	Detailed items.		Taking 5 francs = 1 dollar.
		<i>Francs. cts.</i>	
1	Earthwork, masonry, and carpentry.....	1, 854, 768. 23	\$370, 953 65
2	Metal-work.....	7, 970, 799. 08	1, 594, 159 82
3	Ornamentation in the roofing.....	109, 167. 89	21, 833 58
4	Zinc-work in roofing .....	514, 999. 61	102, 999 92
5	Glazing and glass.....	249, 903. 31	49, 980 66
6	Painting .....	297, 222. 71	59, 444 54
7	Drapery, &c., for ceiling, in linen, &c .....	93, 400. 21	18, 680 04
8	Cariatides, consols, pedestals, poles, &c.....	177, 267. 97	35, 453 59
9	Flooring and flaggings.....	120, 334. 36	24, 066 87
10	Entrances, portals .....	34, 840. 00	6, 968 00
11	Lightning-rods .....	15, 206. 12	3, 041 22
12	Provisionary fences, &c .....	35, 316. 86	7, 063 37
13	Personal and general expenses.....	309, 798. 58	61, 959 73
	Total .....	11, 783, 024. 93	2, 356, 604 99



*Statement of the expenses and receipts of the exhibition from February 1, 1865, to February 4, 1872.*

## EXPENSES.

Item.	Object.		Taking 5 francs = 1 dollar.
		<i>Francs. cts.</i>	
I	Construction of the palace.....	11, 783, 024. 93	\$2, 356, 604 99
II	Grant for the installment of the interior department of the exhibition, gallery of the history of work, Chinese exposition, &c.....	292, 272. 20	58, 454 44
III	Installment of the machinery department, support for shaft-		
IV	ing, carpentry, masonry, railroads, &c.....	1, 347, 557. 80	269, 511 56
V	Water-service.....	346, 134. 23	69, 226 85
VI	Gas-service.....	346, 108. 60	69, 221 72
VII	Fencing in the park.....	50, 000. 00	10, 000 00
VIII	The arrangement and making of park.....	2, 879, 621. 52	575, 924 30
IX	Bridge on the Quai d'Orsay.....	69, 278. 26	13, 855 65
X	Grant for the transportation of workmen.....	10, 233. 25	2, 046 65
XI	Printing and publishing.....	272, 327. 43	54, 465 49
XII	Administration and superintendence.....	957, 431. 04	191, 486 21
XIII	Office expenses and stores.....	139, 316. 65	27, 863 33
XIV	Office-building on the Champ de Mars.....	102, 242. 91	20, 448 58
XV	Special expenses of the fine-art department.....	92, 595. 48	18, 519 10
XVI	"Commission d'encouragement".....	597, 410. 27	119, 482 05
XVII	Medals and awards.....	1, 089, 443. 88	217, 888 78
XVIII	Indemnities and fees.....	615, 204. 20	123, 040 84
XIX	Expense of representation.....	174, 680. 09	34, 936 06
XX	Ceremonies upon granting awards.....	578, 530. 38	115, 706 02
XXI	Interest paid on advances of the "credit foncier".....	10, 353. 92	2, 070 79
XXII	Musical exhibition.....	190, 900. 52	38, 180 11
XXIII	Unforeseen expenses.....	1, 099, 087. 31	219, 817 46
XXIV	Maintenance of the palace.....	79, 584. 37	15, 916 87
XXV	Restoration of the Champs de Mars.....	320, 182. 96	64, 036 59
XXVI	Net profit, constituting dividends.....	2, 766, 000. 00	553, 200 00
	Reserve fund for unforeseen needs or for the public good.....	47, 283. 00	9, 456 60
		26, 256, 805. 20	5, 251, 361 04

## RECEIPTS.

Item.	Object.		Taking 5 francs = 1 dollar.
		<i>Francs. cts.</i>	
I	Grant or subsidy from the government.....	6, 000, 000. 00	\$1, 200, 000 00
II	Grant or subsidy from the city of Paris.....	6, 000, 000. 00	1, 200, 000 00
III	Admissions by subscription.....	935, 050. 00	187, 010 00
IV	Admissions by turnstile.....	9, 830, 369. 50	1, 966, 073 90
V	Restaurants and lemonade-stands.....	475, 327. 37	95, 065 48
VI	Saloons and "boutiques".....	40, 020. 00	8, 004 00
VII	Money-changing offices.....	25, 000. 00	5, 000 00
VIII	Chairs.....	36, 000. 00	7, 200 00
IX	Arm-chairs on wheels.....	10, 000. 00	2, 000 00
X	Tobacco-shops.....	70, 000. 00	14, 000 00
XI	Advertising by posters.....	75, 000. 00	15, 000 00
XII	Catalogues.....	323, 000. 00	64, 600 00
XIII	Commemorative medals.....	14, 361. 60	2, 872 32
XIV	Photographs.....	85, 000. 00	17, 000 00
XV	Water concessions.....	18, 757. 30	3, 751 46
XVI	Gas concessions.....	198, 322. 07	21, 664 42
XVII	Materials for the demolition of the palace.....	1, 011, 779. 82	202, 355 96
XVIII	Materials for the demolition of the park.....	63, 475. 51	12, 695 10
XIX	Water-closets.....	25, 011. 05	5, 002 21
XX	Waiting-room.....	35, 000. 00	7, 000 00
XXI	Concessions at "Billancourt".....	70, 000. 00	14, 000 00
XXII	Interest from the account-current.....	364, 811. 32	72, 962 26
XXIII	Musical concerts.....	106, 417. 40	21, 283 48
XXIV	Sundry receipts.....	534, 102. 26	106, 820 45
		26, 256, 805. 20	5, 251, 361 04

Accompanying this report will be found the following :  
The report of the imperial commission, giving a complete description of the building in all its parts, and the official plan of the exhibition.  
The international jury reports—13 volumes.  
A complete work by Anton Hanninger, engineer, published by Waldheim, in Vienna, giving text and details of the construction of the building.  
A collection of forty panoramic photographs, lithographs, &c., showing the exhibition both as a whole and in detail.

XIII.—VIENNA.

(Continuation of previous reports from Vienna, April 4 to May 26, 1873, inclusive.)

*Industrial palace.*

Length of building, end to end .....	3, 000	feet.	
Width at center permanent building.....	677	“	
Width at intermediate galleries .....	572	“	
Diameter of rotunda on center line of columns..	343	“	9 inches.
Width of half-gallery around the rotunda.....	40	“	
Total clear width under rotunda and half-gallery.	413	“	
Interior height of rotunda to base of large lantern.	158	“	
Ditto to top of large lantern .....	215	“	
Exterior height to top of crown.....	276	“	
Angle of roof with the horizontal.....	31°		
Width of central nave .....	84	“	
Width of cross transepts .....	51	“	
Length of vista in nave on each side of the ro- tunda .....	1, 246	“	
Size of courts between the transepts, each.....	100'x240'		
Number of such courts.....	28		

*Machine-hall.*

Length of building .....	2, 620	feet.
Width of building.....	165	feet.
Center avenue, width in the clear.....	92	feet.
Side avenues, width in the clear.....	28	feet.

*Areas.*

Industrial palace :		
Area under rotunda.....	2. 2	acres.
Area under rotunda and half gallery .....	3. 4	“
		Acres.
Area of entire rectangular permanent portion, 677 feet square, in- cluding the 4 courts .....	10. 5	
Area of entire rectangular permanent portion, 677 feet square, ex- cluding the 4 courts .....	7. 0	
Area of temporary portion of palace, including the 28 courts....	32. 3	
Area of temporary portion of palace, excluding the 28 courts....	17. 0	
Total area of palace, excluding courts.....	24. 0	
Total area of palace, including all courts, viz: area capable of being put under roof .....	42. 8	
Actual area under roof June 1st, 1873. ....	35. 0	



	Acres.
Machinery-hall:	
Area covered .....	9.0
Fine-art gallery:	
Area covered and affording 30,800 feet of available wall length..	1.5
Pavilion for amateurs—area.....	.4
Museum—area.....	.4
Agricultural buildings:	
Three large frame structures, covering.....	6.0
Area inclosed by the fencing .....	286.0
Total area on the Prater available for exhibition purposes .....	573.0

The total weight of all wrought-iron work for the rotunda is 4,000 tons. The columns rest upon foundations made in concrete, (see first report,) which were built in October, 1871. The contract for the rotunda was taken by M. Harkort, a noted lattice-girder bridge-builder of Harkorten, Prussia, and it stipulated that the supply of iron should commence on January 1, 1872, and that the whole building should be finished by September 15 of the same year. It is but fair to state, however, in this connection, that if the rotunda had been built in accordance with the original sketches of Mr. Scott Russell, the weight of wrought-iron necessary would have been but little more than half the above amount.

The following may be interesting for comparison: The dome of the Capitol at Washington, by Mr. Thomas U. Walter, architect, contains 8,878,743 pounds, or 4,439 tons of 2,000 pounds each of cast-iron. The total cost was \$950,000, which covered all brick-work and masonry, and a picture by Brumidi, \$40,000. It would be fair to assume that the actual cost of the iron-work did not exceed 8 cents per pound.

(For cost of Vienta rotunda, &c., see accompanying estimate.)

#### XIV.—SEWERAGE AND DRAINAGE.

The system of sewerage throughout the buildings and grounds, together with the most important work connected with the retiring-rooms of the exhibition, was designed and executed by Mr. George Jennings, sanitary engineer of Lambeth, London, under the personal supervision of Mr. John Phillips, C. E. The intention of the Austrian authorities at first was to allow each party to have their own cess-pool and separate arrangements, but a very short experience of the consequences compelled the adoption of a complete system which should be able to include all buildings within the inclosure. Stone-ware pipes were used, with the joints laid in Portland cement. The main sewer leads into the Danube Canal at a point say one and a half miles from the exhibition. The various lines of pipe, sizes, grades, &c., we have shown upon the situation-plan of the exhibition. The rotunda, roof, and inner side of the center rectangle of the palace is drained into eighteen sunken wells. A 15-inch pipe, having four smaller ones leading into it, connects with each well. Each of these smaller pipes carries off its portion of the water which comes from the roof, after it has passed down through the large wrought-iron boxed girders which support the rotunda. There are four and sometimes five of these wells in each court. The arrangement is remarkably simple and satisfactory, for it must be remembered in this connection that the rotunda, roof, and gallery has an immense exterior surface.

The machinery department has each boiler-house drained into a sunken well located between the boiler-house and the machinery-hall. The



machinery-hall itself is drained at numerous points into wells located on the south side of the building.

The grades for the sewerage system are merely nominal, one in 700 and one in 1,000, but sufficient to allow thorough washing out by water from a hose several times each week.

Cisterns were introduced in all the retiring-rooms for the purpose of keeping uniform the strong pressure of water which comes from the "high-service."

#### XV.—WATER SUPPLY—(ADDITIONAL.)

The water-tower, elevation 110 feet, is located near the west end of the machinery-hall. The tank had capacity of 10,000 cubic feet. The water is forced up into this tank through the center pipe of the tower, and flows out at the top by several nozzles. It passes down through two of the outside supporting columns, which act as stand-pipes, and are connected at the lower end with the one main which supplies the large system throughout the grounds. An accompanying drawing shows the system. The two steam-pumps used for supplying this tower were manufactured at Brun, the capital of the Austrian Province Mahren, by the "Bruner Maschinen-Fabrik-Gesellschaft," 1873. They were arranged to work either separately or together, and can force into the tower 18,000 cubic feet per hour. When we last visited these pumps, about May 26, they were working from sixteen to eighteen hours per day, and supplying 300,000 cubic feet per day to the exhibition. They were performing, in fact, extra duty, which legitimately belonged to the pumps of the "low-pressure" system, the latter not being in working order up to that date. The pump-house was located at the northwest end of the machine-hall, and the well from which the water was drawn was immediately in the rear of the pump-house. This well was 20 feet in diameter, and extended down 16 feet below the water-level, say 26 feet below level of ground. It was lined with brick, resting upon a cast-iron ring at the bottom. The method used in sinking this well was ingenious. The supply of water is apparently unlimited. The pumps and tower were manufactured by the same parties.

The two steam-pumps for the "low-pressure" service were located at the east end of the machinery-hall. These were manufactured by "Eug. Prunier. Ingenieur et Conducteur, Lyon, France." The superiority claimed for them was their ability to supply with rapidity, their capacity being upward of 20,000 cubic feet per hour. No well was necessary in connection with this system, as the pumps sucked the water directly from the ground itself and forced it into a neighboring tank placed at an elevation twenty feet above the ground; capacity of tank, — cubic feet. From this tank a line of pipes passed along the northern side of the machinery-hall, and connections were made from it into the boiler-house. This line of pipes emptied at the east end into the Henstadel Wasser, and a branch led into the agricultural department. The above system was not in working order up to May 25, 1873.

In the rear of the jury-pavilion were two steam-pumps manufactured by "Gebrüder, Decker & Co., Canstatt, No. 401, Patent 1873," in Württemberg, near Stuttgart. These pumps drew their supply of water from a well 12 feet in diameter, and sunken 20 feet deep, and, working by means of an air-chamber, were able to force up about 10,000 cubic feet per hour. This arrangement supplied all the fountains, and forced the water to a height of 70 feet through a nozzle  $2\frac{1}{2}$  inches in diameter. The nozzle most frequently seen in use for the large fountains was com-



posed of one center opening 35 millimeters in diameter, and sixteen smaller openings around it of fifteen millimeters-diameter each. The water, after being forced through the fountains, was conducted back to the supply-well and used again.

The above three systems of water-supply were arranged to work either separately, or, in case of emergency, in connection with each other.

#### XVI.—RAILWAY COMMUNICATION—(ADDITIONAL.)

The "Stadtsbahn" and "Nordbahn" are connected by a line of single track which passes directly in front of the exhibition railroad-station, an additional siding being introduced in the immediate vicinity of the station. From the station east, this track was built by the Stadtsbahn, the rest by the "Nordbahn." About three times as much freight for the exhibition passed over the Nordbahn as from the Stadtsbahn, and, strange to observe, there was but one main switch from the east or Stadtsbahn end, over which all freight for the exhibition was obliged to pass. The arrangement answered its purpose, however, up to about April 15, over half a million cubic meters of gravel and building-materials having been brought for the work on the exhibition. During the two weeks previous to the opening, however, it proved entirely inadequate so far as affording facilities for unloading in the immediate vicinity of the buildings. It was thought by the railroad officials, who evidently did not appreciate at that time what an immense business their exhibition would occasion, that having made provision for unloading 250 cars per day easily, it was all that would be necessary. During the great rush, however, previous to the grand opening, experience enabled them to unload, when working night and day, 300 cars. The method adopted was about as follows: The wagons were arranged during the night, so that exhibitors could unload their boxes the first thing in the morning. Say 150 wagons were unloaded by noon, and then commenced the removal of empty boxes to the warehouses, and the bringing in of other freight. Four locomotives were at work night and day in the yard with these trains, and two more at the Stadtsbahn and Nordbahn ends of the road for similar purpose. One thousand three hundred wagons were frequently on hand at once, waiting to be unloaded, during greatest rush, and required four to five days' time to distribute the accumulation. Much time was occupied in being obliged to send individual cars to separate parts of the building, and even separate articles from the same car to different points; thus delays occurred at the most critical time. The building itself was well provided with entrances, but the railroad facilities were not such as enabled them to be used to the best advantage. Experience proved that at least four tracks on each side of the industrial palace and two on each side of the machine-hall would not have been too much for the work. There were nearly three German miles, equal to fifteen English miles, of track laid in the Prater in connection with the exhibition work. One great difficulty, undoubtedly, was in the use of only one connection at the Stadtsbahn end. High grades and short curvature prevented any communication from the Nordbahnhof directly to the exhibition.

A tramway for streets-cars was laid from the Prater Stern to a point near the northwest end of machinery-hall; also over the Sophien Bruke to the Haupt Allee.

The accompanying papers and drawings give important information with regard to the machinery-department, shafting, &c., workmen's houses, restaurants, blacksmith-shop, sanitary arrangements, watch-houses, barracks, &c.



## XVII.—COST.

*Detailed estimate of the cost of the Vienna Exhibition.*

The principal items in this estimate are very nearly correct, as they have been compiled from the contracts made for the work. The accuracy of others cannot, of course, be known positively until long after the exhibition closes.

Taking one florin as = 50 cents, we have:—

	Florins.	Dollars.
1. Industrial palace .....	6, 289, 018	3, 144, 509 00
The rotunda alone cost 1,000,000 florins or \$500,000.		
2. Machinery-hall .....	951, 448	475, 724 00
3. Agricultural-hall .....	670, 000	335, 000 00
4. Fine-art gallery .....	742, 000	371, 000 00
5. Amateur-gallery .....	422, 600	211, 300 00
6. Emperor's pavilion .....	20, 000	10, 000 00
7. Covering of the courts .....	580, 000	290, 000 00
8. Jury-pavilion .....	141, 000	72, 000 00
9. Manager's buildings, offices .....	75, 042	37, 521 00
10. Postal, telegraph, and custom buildings	53, 477	26, 738 50
11. Six large guard-houses .....	34, 989	17, 494 50
12. Ten small guard-houses .....	40, 904	20, 452 00
13. Infantry barracks .....	64, 500	32, 250 00
14. Cavalry barracks .....	14, 979	7, 489 50
15. Sutler's department .....	8, 700	4, 350 00
16. Fencing of exhibition-grounds, covered ways, &c. ....	292, 000	146, 000 00
17. Water-supply, including all forcing-en- gines and water-tower .....	340, 000	170, 000 00
18. Arrangements for working the machin- ery-hall, such as boiler-houses, driv- ing-engines, shafting, foundations, work-shops, &c. ....	603, 400	301, 700 00
19. Provisionary buildings .....	15, 000	7, 500 00
20. Expenses of the building-office, includ- ing salaries, gas-rent, coal, &c. ....	345, 000	172, 500 00
21. Preliminary work of the building-office, drawings, &c. ....	40, 000	20, 000 00
22. Building-requisites, engineering-instru- ments, stationery, &c. ....	12, 000	6, 000 00
23. Delivery of the rotunda, freight, &c. .	22, 800	11, 400 00
24. Drainage, and water-closets, &c. ....	147, 000	73, 500 00
25. Fountains .....	25, 000	12, 500 00
26. Expenses for telegraph and gas arrange- ments .....	36, 800	18, 400 00
27. New annexes .....	500, 000	250, 000 00
28. Police service, gardens and grading, railways, &c., and military labor ..	369, 479	184, 739 50
29. Terracing, streets, roads, places of wait- ing for cabs and carriages .....	748, 931	374, 465 50
30. Sanitary provision—medical treatment by army physicians .....	4, 681	2, 340 50
31. Cashier's office—a service at entrances.	4, 314	2, 157 00



	Florins.	Dollars.
32. Territorial indemnifications.....	12, 156	6, 078 00
33. Sundries.....	69, 366	34, 683 00
34*. General expenses of the central direc- tion .....	1, 553, 000	776, 500 00
35. Price, difference of bricks, including tax of consumption paid to the mu- nicipality when passing through the city gates.....	95, 000	47, 500 00
36. Reserve fund.....	352, 416	176, 208 00
Total .....	15, 700, 000	7, 850, 000 00

XVIII.—LIST OF BUILDINGS WITHIN THE INCLOSURE.

[From the Official Plan of the General Direction of the Exhibition.—Official Plan of the World's Exhibition, Vienna, 1873, edition of the General Direction, translated from the German by W. H. Burr, C. E.]

*Main Exhibition—Buildings and Side Buildings.*

- |   |   |
|---|---|
| I. Industry-palace with the ro-<br>tunda. | XI. Postal telegraph and cus-<br>toms.          |
| II. Machinery-hall.                       | XII. Barracks.                                  |
| III. Art-gallery.                         | XIII. Building for the exhibition<br>of horses. |
| IV. Pavilion for art.                     | XIV. Railway-station.                           |
| V. Exhibition of amateurs.                | XV. Guard-houses.                               |
| VI. Western agricultural hall.            | XVI. Water-closets.                             |
| VII. Eastern agricultural hall.           | XVII. Covered ways of communica-<br>tion.       |
| VIII. Jury pavilion.                      |   |
| IX. Emperor's pavilion.                   |   |
| X. Offices of the direction.              |   |

The plan is divided into four zones. Each zone has its own number<sup>n</sup> ing.

*First zone.*

- American restaurant.
- 1½. American school-house.
- Beer-hall of the citizen brewery, Pilsen.
- Beer-hall of the Pilsen Joint-Stock Brewery.
- Hungarian wine-house, (Czarda.)
- American drinking-hall.
- Pavilion of the New Free Press.
- Swiss confectioners, by Possard, of Zurich.
- Pavilion of the musical box manufactory, by Heller, in Bern.
- Beer-hall of the brewery of Liesing, near Vienna.
- French restaurant.
- Pavilion of Prince Monaco.
- Pavilion of the Finsponk Domain.
- Swedish school-house.
- Swedish army exhibition.

\* This is the item of expense which occasioned so much severe criticism by the press of the country, and in regard to which the most spirited debates took place in the Austrian Parliament. Accompanying this report will be found the record of the final debate.

15. Swedish hunting pavilion.
16. Gothic mausoleum, by Wasserburger.
17. Boiler-house for the water supply, Brothers Decker & Co., of Canstatt.
18. Kiosque of the Southern Railway.
19. Kühn's portable house, (dwelling.)
20. Pavilion of the First Austrian Savings Bank.
21. Mr. Stark's pavilion.
22. Pavilion of the Little Child.
23. Restauration of the Brothers Provençaux, Paris.
24. Reading-room, }
25. Restaurant,        } of Natale Biffi, from Milan.
26. Wine-house,        }
27. "Eisen hof," hall for the exhibition of metal industry.
28. Pavilion of the Austrian Healing Springs.
29. Pavilion of tobacco and cigar specialties.
30. Pavilion of the Perlmoser cement ware manufactory of J. Neumüller, in Nussdorf.
31. Russian restaurant, by Engel, in St. Petersburg.
32. Wine-house of Steiermark, (Austrian province,) of the Steiermark Vineyard Company of Gratz.
33. Russian dwelling-house.
34. Exhibition of the Austrian Lloyd.
35. Wigwam. Restaurant.
36. Iron forcing-house, by R. Ph. Wagner.
37. Palace of the Viceroy of Egypt.
38. Little Japan—buildings and gardens.
39. Dr. Hardt's oriental circle.
40. Turkish dwelling-house.
41. Turkish bazaar.
42. Turkish coffee-house.
43. Persian dwelling-house.
44. Exhibition of the Imperial and Royal Ministry of Marine.
45. Light-house, by Sautter & Co., of Paris.
46. House of the Photographic Association.
47. Dairy of the Imperial and Royal Farming Company.
48. Pavilion for the reception of the sick.
49. Building court.
50. Italian restaurant—iron house, by S. C. Hemming & Co., of London.
51. Exhibition of the Imperial and Royal Horticultural Society.
52. Pavilion of the iron furniture manufactory of Quittner & Herzog.
53. Gardener's dwelling.

*Second zone.*

1. Light-house.
2. Fountain. Sultan Achmed II.
3. Triumphal arch of Wienerberg brick manufactory.
4. Russian peasants' house.
5. Pump-house.
6. Iron church.
7. Swedish dairy.
8. Pavilion of the administration of the royal Hungarian "woods and forests."
9. Pavilion of the Steiermark owners of woodlands.
10. Saxon peasants' house.



11. Szekler peasants' house.
12. Austrian school-house.
13. Vorarlberg peasants' house.
14. Austrian gymnasium.
15. Pavilion for glass-painting.
16. Slovatian peasants' house.
17. Croatian peasants' house.
18. Roumanian peasants' house.
19. Gaydelian peasants' house. }
20. Gaydelian peasants' house. } From the neighborhood of Presburg.

*Third zone.*

1. American restaurant.
2. Vienna bakery, by Roman Uhl.
3. English workman's dwelling-house.
4. Pavilion for seed.
5. Water tower for the high-water service.
6. Iron house, by S. C. Hemming & Co., London.
7. Swedish restaurant.
8. Norwegian }
9. Swedish } fishery exhibition.
10. Norwegian garden kiosk.
11. German teaching pavilion.
12. Germany's pavilion of industry.
13. German exhibition of mining industry.
14. Tasting-room of the Dreher beer brewery.
15. Pavilion of the Duke August of Coburg-Gotha.
16. Pavilion of Prince Schwarzenberg.
17. Pavilion Mauthner.
18. Stable building, by R. Ph. Wagner.
19. Curtis' obelisk of cement.
20. Little house of artificial stone, by Chailly.
21. Vorderberg }
22. Innerberg } exhibition of mining industry.
23. Kärntner }
24. Pavilion of the joint-stock brewery of Silbereg. (Kärntner.)
25. Joint Stock Machine Building Company, formerly Danek & Co.,  
Prague.
26. Tar and asphalte, by J. Bosch.
27. Building ornaments of zinc, by Vinc. Wenzel.
28. Steffen's exhibition of machinery.
29. Rothschild's bridge-building.
30. Rothschild's machinery exhibit.
31. Slate exhibit, by Jno. Liebieg.
32. Wood-ware, by Schuberth.
33. States Railroad pavilion.
34. English restaurant, by Abel Moser and Posse. (Iron house.)
35. Pavilion of the joint stock company for bridge and street building.
36. Tyrolese house. (Wares of carved wood.)
37. Additional exhibition: contributions to the History of Trades and  
Inventions, and pavilion for women's work.
38. Pavilion.
39. Pavilion of the Imperial and Royal Private Austrian Danube Steam  
Navigation Co.
40. Alsatian peasant-house.
41. Exhibition of the Imperial and Royal Ministry of Agriculture.

42. Wine-tasting hall of all lands.
43. Sacher's restaurant.
44. Pavilion of the joint stock company for forest industry.
45. Pavilion of the Archduke Albert.

*Fourth zone.*

1. Bakery by Heilfinger.
2. Boiler-house.
3. American boiler-house.
4. English workman's dwelling-house.
5. English boiler-house.
6. English workman's dwelling-house.
7. French boiler-house.
8. English gas factory.
9. Gas Company, limited.
10. Belgian workman's dwelling-house.
11. Machinery workshop.
12. Swiss boiler-house.
13. Belgian boiler-house.
14. Pavilion of the world's trade.
15. German boiler-house.
16. Germany's pavilion for brick-kilns and ice-machines.
17. Austrian boiler-house.
18. Pavilion of the Northern Railway.
19. Pavilion of the Northwest Railway.
20. Boiler house for the water-supply.
21. Pavilion Ringhofer.

XIX.—LIST OF PAPERS, DRAWINGS, ILLUSTRATIONS, ETC., CONCERNING THE VIENNA EXHIBITION OF 1873, ACCOMPANYING THIS REPORT.

Translations from the German, by Mr. W. H. Burr, C. E., of Baron Schwarz-Senborn's lecture before the Engineers and Architects' Association of Vienna. "Notes concerning the great rotunda," by inspector Heinrich Schmidt. "The building for the exhibition of 1873," from the journal of the Engineers and Architects' Association.

A complete set of the official programmes of the exhibition. Special orders of the general direction.

A complete set of the forms, blanks, drawings, &c., used by the British commission in transacting business with exhibitors in their own department, and with the Austrian general direction. Presented by P. Cunliff Owen and A. I. R. Trendell, of the royal British commission.

A series of articles written by Mr. Geo. C. V. Holmes, resident engineer of Mr. Scott Russell, at Vienna, giving full detailed description, with accompanying drawings, of the construction of the exhibition buildings. Published in London "Engineering" from January 3 to May 16, 1873.

Throughout both volumes xv and xvi of "Engineering" will be found very valuable contributions concerning the technical part of the exhibition. A complete work devoted to the same purpose will be issued by Messrs. Maw & Dredge, editors of "Engineering," after the exhibition closes.

A set of 80 lithographic *working-drawings* of the exhibition-buildings. Presented by Baron Schwarz-Senborn.

A collection of 130 photographs, taken by the Vienna Photographic



Association, showing the progress of the work and final appearance of the exhibition.

A collection of 33 specimens of the canvas or jute-printed decorations of the various buildings, being pieces of the actual decoration for the palace.

A collection of 11 chromo-lithographs, showing the appearance of the city of Vienna during the continuance of the exhibition.

Maps, catalogues, flags, &c.

Also :

Published works, lithographs, photographs, and illustrations with regard to the following :

Munich exhibition, 1854.

Sydenham palace, London.

Alexandra palace, London.

Art-treasurers' exhibition, Manchester.

Conservatory, Covent-Garden theater.

Oxford music-hall, London, &c.

## XX.—A FEW PRACTICAL CONSIDERATIONS CONCERNING THE UNITED STATES CENTENNIAL BUILDINGS, PHILADELPHIA, 1876.

We will not occupy time by restating the main points already decided by the committee on plans and architecture, but simply present, under as few heads as possible, some suggestions in regard to the most essential matters for consideration at this stage of the centennial work, and in course of our remarks make frequent allusion to what has been already done abroad in settling similar difficulties.

## XXI.—THE PREPARATION OF AMPLE ACCOMMODATION FOR ALL EXHIBITS THAT MAY BE ACCEPTED.

As one of the great ends for which international exhibitions are held' is to properly display the various objects contained in the buildings, it will at once be acknowledged, that in order to do so satisfactorily, it is of no small importance to have as much information as possible both as to the number and kind of the exhibits that must be provided for. In this respect no other international exhibition has ever been undertaken with so little information and precedent, *from native sources*, as the international at Philadelphia in 1876.

Therefore, owing to this primary fact, that it is impossible to know positively, at this early stage of the work, the exact kind of exhibits that will be sent, or the area in square feet each State or country may need, the buildings should be so designed as to meet further requirements that may arise during the progress of the work. The importance of this was fully appreciated in designing the buildings at Vienna.

When the original sketches for the industrial palace were first presented for criticism, it was distinctly stated that the expansion or adaptation of the building to future requirements could be accomplished in two ways, either by extending the transepts in length, or by a judicious use of the intermediate courts. The first supposition proved fallacious, and we think fortunately so for the appearance of the edifice. Mr. Hase-nauer, the chief architect, being a man of both taste and tact, saw instantly that if the transepts were extended to various lengths, the



result would be utterly ruinous to the general architectural effect of the whole design, and he prevented the possibility of any such action being taken, by putting permanent ornamental façades, in keeping with the central feature of the building, at the extremity of each transept. With regard to the courts, however, the case was different. These courts were intended not only for the display of those exhibits from the country in the adjoining transepts which could be shown in the open air, but also to afford opportunity to gain area under roof if required, and experience has proven that such area *was* required in almost every instance.

For our own guidance we have no precedent by which we can judge so long previous to the opening of our exhibition as to how much space each State and foreign nation will need. It is altogether a matter of individual judgment. Although we do know, for instance, how much per cent. of the whole area of the Paris building, or the Vienna building, was occupied by the United States, yet it does not at all follow that either France or Austria will require the same percentage of space in our industrial palace. The Philadelphia buildings should undoubtedly be adapted to the proper display of all offered exhibits that are found to be proper and suitable for admission, the more instructive and novel the better; but so long as neither their kind or number can be positively known, the building should be capable of adaptation to the great demands that will undoubtedly be made as the work progresses. It has frequently occurred at previous exhibitions that some of the most interesting articles have been offered for exhibition during the last six months previous to the grand opening. We would refer to the list of the various building and annexes forming the Vienna 1873 exhibition, which accompanies this paper. Even a rapid glance at this list will convince any one of the immense variety and large size of the exhibits represented. By comparing this list and the final official plan of the exhibition and grounds, with the early drawings of the direction, it will at once be recognized how the demand for space, both in the building and on the grounds, increased, as the work advanced, far beyond the most sanguine expectations of the officials in charge. In one of our reports from Vienna, we wrote as follows, which corroborates the above: "When the buildings were first located it was considered by the general direction that ample space had been left on the intervening grounds for all extra buildings, but experience has shown that it would have been far better to have made greater allowance. The demand for building-sites has been continually on the increase as the 1st of May, 1873, approached, and consequently the authorities have been at a loss to know where to provide sites for the numerous buildings that different nations and private parties are desirous of erecting. The piece of ground between the industrial palace and machinery-hall, originally intended for walks and fountains, is now so densely built up that it resembles a Swiss settlement, with the houses arranged to face the main building.

"In order to obtain space, it has also been necessary to roof in all the open courts on the side of the industrial palace next the machinery-hall, and we notice that, lately, some of the front courts are treated in the same manner."

#### XXII.—ADAPTABILITY TO THE SITE IN FAIRMOUNT PARK.

It has been very gratifying to Americans connected with the Centennial commission to observe the universal acknowledgment by all European engineers and architects who have examined the topographical map prepared by the park commissioners, of the adaptability of the site chosen, to the purposes of an exhibition. The capabilities of the park



being once appreciated, it only remains for the commission to make the most of the site for the exhibition. Fortunately there is no reason why, when locating the various buildings, boulevards, terraces, fountains, &c., such work should not be done as will meet the requirements of the occasion, and at the same time permanently improve the park.

In this respect we would first call attention to the location of the memorial hall, as, when that point is once settled definitely, other secondary considerations will be found to adjust themselves. It will be remembered that the tract of ground chosen by the commissioners, and marked A on the park map, slightly rises from all directions toward its center. This necessitates locating the memorial hall so that when it is left as an isolated building it may stand well upon the ground, the higher up the better, as is the case at Sydenham or Alexandra palaces, near London. This unevenness of the ground also seriously affects the choice of a plan for the industrial palace, because on no consideration should the form of the temporary building be such as to force the permanent memorial building out of its rightful position, viz, the best site on the ground. Future generations, it is to be hoped, will visit our memorial hall long after the temporary portion has been removed, and we owe it to them, if not to ourselves, to leave the permanent part of our centennial work as well located as possible.

The large illustrations accompanying this paper show clearly the superb appearance of Sydenham and Alexandra palaces, in consequence of their being admirably located at the highest portion of the ground. The treatment of the site at Sydenham, in particular, shows great forethought and skill on the part of the management in availing themselves of the natural advantages of the ground. With regard to a site for our own buildings, we would respectfully make the following suggestions:

Standing at the highest point of the site marked A on the park map, which tract has been definitely decided upon for the industrial palace, the conviction has forced itself upon us that there are four different directions, exactly opposite and at right-angles to each other, toward each of which some imposing part of our palace should face, viz: toward Elm avenue, toward the long view up the Schuylkill, toward George's Hill, and toward the art-gallery.

A view of the exterior of our industrial palace from any one of the above four directions should be an impressive one, because it will be proper, from the very necessities of the case, to provide the largest portals for the general admission of the public on those four sides, and the question of approach must be thought of. The Paris building, 1867, made but little pretension in this respect. Vienna, 1873, has an imposing approach toward the main entrance only. Sydenham, 1854, has the most imposing of all, when entered from the terrace. Philadelphia, 1876, has an opportunity to accomplish more than either.

Whether or not our palace shall produce a favorable and impressive effect upon the visitor as he approaches it from a distance, deserves the most careful consideration. It seems to us that it should undoubtedly influence the final selection of a plan, for, if we must spend immense sums of money, let us have a building which is capable of appearing to advantage when seen from all directions.

We have an immense amount to learn from our European friends in regard to the location of our public buildings, and we would most earnestly impress upon the commission the importance of the proper placing of our industrial palace on the ground. The adoption of any plan that would necessitate a bad location for the memorial hall would be a blunder far worse than a crime.



Extending our remarks from the industrial palace proper to the general treatment of the whole of that portion of the park which has been donated to centennial purposes, we would suggest the following as the governing features in the arrangement of the exhibition :

The industrial palace being finally decided upon, both as to general plan and location, connect it with George's Hill by means of a wide boulevard, 100 feet in the clear for vehicles, and 50 feet on each side for pedestrians and equestrians. This boulevard to have, at the very least, three rows of trees on each side, and to be capable of brilliant illumination at night by several rows of gas-lamps on each side, with intervals between the lamps of not more than 40 feet. The Champs Elysées at Paris to serve as the model for the details of construction ; and the system of watering as applied to the main drive along the cliff at Brighton, in England, to be introduced. The idea for the treatment of George's Hill, viz, to locate on the plateau above a permanent building of artistic merit, affording a pleasant resting-place and point of sight for seeing the whole exhibition below, and to form a series of terraces, fountains, &c., leading down to the boulevard, was first suggested to us as far back as last winter by Mr. H. J. Schwartzman, landscape architect of the Fairmount Park commission, who at that early time had partially developed a design for the treatment of that portion of the grounds. Mr. Schwartzman's idea, if carried out, will be undoubtedly just the right thing in the right place, and it can be accomplished at a comparatively small cost, compared with the great results to be attained. The building and terraces would not only be beautiful in themselves, but afford a prominent point of universal interest at the opposite end of the exhibition grounds from the industrial palace. The boulevard would become the general thoroughfare inside the exhibition grounds, and present an appearance as gay as the Haupt Allee at Vienna. If at the same time the machinery department should be located on the tract south of the boulevard, and the various out-door exhibits of private enterprise arranged so as to bring those which are most attractive into prominent positions along the north side, and on the slope of the hill toward the reservoir the view from George's Hill would rival that of the Champs de Mars, in 1867, from the Trocadero.

The horticultural department, if located on Lansdowne Terrace, could be connected with the main boulevard by an avenue, which should lead down on the same center-line as the horticultural buildings themselves, which avenue would intersect the boulevard at a point about the center of its length. This intersection could be improved as at the "Round Point" in the Champs Elysées. The Belmont avenue could be retained, with increased width, for street-cars, vehicles, equestrians, and pedestrians.

The above-mentioned points furnish but an outline of one system of arrangement, but quite sufficient for present purposes, to prove that the site is capable of such treatment as would give us many good points not found at any previous exhibition.

If some such general features are adopted *soon*, the result will be that a clear, well-defined intention will be stamped upon the work at its very start, and system will be evident throughout. Each part of the exhibition will not only appear well in itself, but be recognized as forming part of one grand design.

Such action will also inspire confidence in the public as to the success of the centennial movement much quicker than any other means, by giving the public a clear and satisfactory idea, illustrated by pictures



distributed throughout the country, that their money is being spent in producing grand results, creditable to the country in 1876.

We have spoken incidentally of the machinery-hall as being located on the south side of the main boulevard, viz, between it and Elm Avenue. The circumstances are such that the most direct railroad connection can be obtained upon that side, and as the area is ample for our purpose, it seems evident that the machinery-hall should be so placed. The location for the agricultural machinery halls can only be judiciously decided upon when more is known as to how extensive they must be, and what interior arrangements may be required; whether, for instance, they shall contain implements and machines standing quietly in position, as usual in European exhibitions, or in motion, as has been done at the Cincinnati industrial exhibitions, of which Mr. A. T. Goshorn, director-general of the United States centennial exhibition, has been president. The same remark is also true with regard to all buildings required in connection with cattle-shows, trials of speed of horses, trials of agricultural machines, warehousing of boxes, &c. The reports and drawings accompanying this paper, show how each of these departments was provided for at Vienna.

#### XXIII.—THE APPLICATION OF THE DUAL SYSTEM OF CLASSIFICATION, AND PLANS OF EXHIBITIONS.

The following points with regard to the application of the dual system of systematic and geographic classification have been suggested to us in various conversations with parties who have had experience in previous exhibitions. The dual system can be applied to any covered area, which has a proper width in proportion to its length, whether it be rectangular, circular, segmental or elliptical in plan, and in each case either system can run either way; but there will be found no one plan which is so complete that serious objections cannot be urged against it. We do not propose in this paper to discuss the relative merits of any of the various arrangements that have been proposed, but simply to call attention to some of the difficulties to be overcome in any building having curved corridors or a ground-plan more or less rectangular in form. The commission can best decide which shows the greatest capability for adaptation to our wants.

We quote the following passage from Baron Schwarz-Senborn's lecture before the Engineers and Architects' Association of Vienna. He said: "You will remember that the monotony of the building of Paris, 1867, was perfectly awful. It resembled a gigantic gasometer, and made but very poor impression on the mind; certainly no such impression as was created by the exhibition building of 1851, in London."

Again, the curved galleries used at Paris, in 1867, produced considerable inconvenience in carrying out the dual classification, in consequence of the radial segments being smaller at one end than at the other.

It is not a satisfactory answer to this last remark to state that in cases where the exhibit was very large, it was extended into the neighboring segment, because, as soon as that variation is considered admissible, the clearness of the system is lost, and the whole arrangement becomes confused and "unphilosophical."

Again, curved corridors often occasion extra expense in the construction, and what is of much importance for our consideration, they will be found much more difficult to be disposed of by sale, after the exhibition closes, than if not curved.

Also, in the opinion of many, the interior effect from a curved gallery



or corridor, prolonged to a great length, is so confusing that the public often become uncertain as to which part of the curve they may be in at the time, and locomotion through the building then becomes very unsatisfactory. We have had this remark corroborated by many different parties who experienced annoyance in Paris, in 1867. The latter difficulty can be entirely overcome, however, by the introduction of naves or straight galleries intersecting the curved galleries, in which case the naves serve as points of reference when moving about in the building. This idea was much favored by Baron Von Weber, the eminent Saxon engineer, who has represented his country at very many of the leading exhibitions in Europe. Baron Von Weber suggested, for our purpose, an adaptation of the Paris building of 1867, which could be made by separating that structure along the center of its shorter axis, and inserting between the two halves a lofty nave; the ends of the naves to be treated architecturally, and the center part of it, or the whole if desirable, to be designed to form the permanent memorial hall. This idea he thought could be developed so as to include most of the advantages to be found in previous exhibition-buildings.

There is, however, one class of curved buildings which does away with the defects incident to curved galleries and corridors, viz, those which, like the Vienna rotunda, are constructed so as to bring the whole exhibition under one immense roof. The greatest living advocate for such constructions is Mr. Scott Russel, who prepared the original design for the Vienna rotunda. Mr. Russel described to us, as perfectly feasible, the construction of an industrial palace for our exhibition, which should allow all the exhibits to be placed under a single roof, of one thousand (1,000) feet span if necessary; which roof should be an example of Mr. Russel's system of conical-roof construction. For a graphic account of this method of construction, which was proposed by Mr. Russel for the erection of the rotunda, at Vienna, but not adopted by the Austrian authorities, we would refer to an article written by Mr. G. C. V. Holmes, Mr. Russel's resident engineer at Vienna, which was published in the London *Engineering* for March 14, 1873. By keeping this idea of one immense conical-roofed building in view, and referring back to the suggestions given in our report from Vienna of April 28, 1873, you will have the key to the motive which originated Mr. Russel's remarks in his conversation concerning our palace. Whether or not such a building would be desirable for our purpose, the commission can best decide.

Buildings more or less rectangular in plan do not, as a general thing, concentrate all the exhibits around one central forum or meeting-place, nearly as effectually as a building having curves, and the importance of providing some such central meeting-place, be it a rotunda, dome, or nave, with the buildings properly arranged in connection with it, is very great.

"After all, the most interesting study to human beings is human beings themselves," and that exhibition-building which affords the most satisfactory opportunity for people to see each other and appear to each other to the best advantage, will be in a fair way to great popularity from that single fact alone. A good opportunity to study human nature in this respect can be seen at the crystal palace at Sydenham, where, although there are so many objects of artistic merit throughout the building, yet the crowd seem to care but little for such exhibits, and attend much more frequently "to spend a happy day," than to examine critically what is around them. All exhibitions are attended, more or less, for this same reason, and the popularity of such undertakings very



much depends upon having a building so constructed that people can be entertained when *en masse*.

Indirectly connected with this subject there is this thought also for consideration. A large item of expense, probably much more than will be realized at first, can be avoided by making the memorial-hall so much of the integral part of the ground-plan of the whole industrial palace that it can be utilized by placing some portion of each department, or each country, in it. So many acres of temporary buildings can be thus saved. If the memorial-hall does *not* form an integral part of the ground-plan, it will be extremely difficult to use it in connection with the dual system of classification.

At Vienna the permanent portion of the industrial palace, viz, the rotunda and square galleries, including the four largest courts, did form an integral part of the general plan of the building. Also, at Paris, in 1855, the permanent industrial palace was used for the display of the various departments.

We would most respectfully suggest a very thorough consideration of this point in all its bearings, particularly as there is a very decided opinion expressed by many in favor of making our memorial building so entirely separate and distinct as not to be utilized in furnishing available area for the application of the dual classification. Such would undoubtedly be a most expensive plan to carry out, and it is very questionable whether we could succeed between now and 1876 in executing in a creditable manner so ambitious an undertaking.

#### XXVI.—FURTHER CONSIDERATIONS WITH REFERENCE TO THE MATERIALS AND SUPERSTRUCTURE OF THE BUILDINGS.

We shall obtain a clearer idea of what we can accomplish in this respect by first finding out what materials we have at our disposal; and, secondly, by noting some general lessons to be learned from the construction of other exhibition buildings.

It will be acknowledged by any one gifted with common sense, that we can build the cheapest, quickest, and best with the materials we are in the habit of using; and those materials are brick, colored stones terra cotta and tiles of various forms and colors. The list is a long one, and speaks volumes as to the resources of the country in building materials—brick, marble, iron, slate, glass, and wood—the item bricks including

Perhaps it is not too much to say that in our exhibition buildings we can use, in a greater or less degree, any or all of the above materials, and still keep within the limits of our moderately skilled labor, and command a good class of work.

Just in this connection we will enumerate some of the principal materials used for previous exhibition buildings: London, 1851, was built principally of iron and glass, with wooden floors. The Munich, 1854, and Sydenham Palaces stand to-day with the same construction. London, 1862, and the Alexandra Palaces have exterior walls of brickwork and cast-iron columns for the interior supports, both wood and iron being used in the roof. Paris, 1867, had also brick walls and wooden floors, with iron used extensively, but in a way that was radically different from that in London in 1851.

The following extract from Baron Schwarz-Senborn's lecture explains itself. When speaking with regard to the Paris building of 1867 being salable after the exhibition closed, he remarks:

The government of Württemberg was desirous of purchasing one part of the building and putting it up again in Stuttgart, so as to use it for a trades school-house. Mr.



President von Steinbeis went on to Paris, accompanied by two other engineers, but when he arrived there he was forced to declare his opinion that it was impossible to carry out the idea, because it would cost more to break up the old building than it would to erect a new one in Stuttgart. The reason of this was that the whole structure was rivetted together, and all the old rivets would have had to have been taken out. On this account the commission of the exposition sold off the old building merely as old iron. It was broken up into proper lengths and sold at 13 centimes the kilogram, realizing for the whole only 1,200,000 francs; by which transaction the contractors for the demolition made only from sixteen to eighteen thousand francs, their expenses being very heavy on account of the high rate of wages.

With regard to the various materials used in the Vienna buildings, we would refer to our first report, and remark here that rough brick walls with plaster finish, iron-lattice posts and roof-trusses, with wooden and zinc covering, predominated.

The illustrations accompanying this paper show what effect was obtained in each case. There is one lithograph, however, of the interior of the Brighton Aquarium, which is intensely suggestive to us as to what *we can* accomplish by a most effective use of very old means. This lithograph shows the great effect that may be obtained by the proper introduction of colored and glazed bricks, in connection with terra-cotta and tiles. This Brighton Aquarium furnishes a suggestive example of a style of work in which we ought to excel, and which is extremely effective when properly introduced. An example of such brick-work is to be seen on the north side of the new Academy of Fine Arts, Philadelphia, by Messrs. Forness & Hewitt, architects, and several admirable specimens have been executed at Central Park, New York. There are many Americans to whom the brilliant colors that are to be found upon the terra-cotta or brick construction of some of the oldest Italian cities would be a new revelation if reproduced in our centennial buildings. Fortunately it is quite within our ability to produce with moderately skilled labor, and at a reasonable cost, a similar effect.

With regard to the use of our plain red bricks, the question may as well be stated plainly and without affectation. It will be much better to leave brick entirely out of consideration, when working up the design for our buildings, if in using them we shall be compelled to reproduce the intensely monotonous and unbearably stupid work that is to be seen around us already. As, however, the facts of the case are these, viz, that we *can* build quicker and cheaper in brick than in any other manner, and it is unreasonable to expect that such an immense construction as our industrial palace shall not be partly made of bricks; it remains for us to use them in the most effective manner possible. Taking all into consideration, it is fortunate we have such materials and labor equal to the emergency. It would be found, for instance, a physical impossibility to reproduce the superb designs, with bas reliefs in stucco and plaster, that form the exterior decoration of the Vienna building. The skilled labor which has been especially educated to that business for years we could not command, to say nothing of the difficulty of obtaining sand of the peculiar quality used in the Vienna plastering, which is found in such abundance near that city. Also with regard to the immense amount of riveted iron-work used in the construction of both the Paris, 1867, and Vienna, 1873, buildings, we may just as well consider such construction as beyond our reach, both on account of the time required to execute it, and the great cost of such work in this country.

In the many points to be observed in the construction of previous exhibition buildings, there are none more important for our consideration



than those referred to by Baron Schwarz-Senborn in his remarks to the engineers and architects of Vienna. We therefore quote again from that valuable paper. Speaking of the London, 1851, exhibition the Baron says :

I will not call your attention now to all the inconveniences and deficiencies which were found to exist in that building. One of the greatest, however, not only here, but also in all later exhibitions, was the leaking in of rain through the roof, whereby a great number of the objects on exhibition were damaged. This was a defect which occurred in a far greater degree in the year 1867 in Paris. Another objection was the galleries, which are always a source of trouble in an exhibition building. They caused much trouble and annoyance, both by the dust which they were the means of raising throughout the building, and by difficulty of access and installation. In addition to that, it became very evident that the number of people who visited the galleries, compared with those who circulated in the lower part, was an exceedingly small one indeed.

Another very perceptible inconvenience was the insufficiency of doors, which was the cause of much confusion, especially during the fourteen days previous to the opening of the exhibition, when the greatest shipments of goods arrived at the doors of the exhibition at one time.

I have seen in London, in the years 1851 and 1862, and in Paris, in 1855 and 1867, the time during the last few days before the openings, when there have been such quantities of wagons and railway carriages standing outside of the doors of the exhibition that they have been kept waiting from six to eight days and nights because they could not be unloaded, there being no sufficient space for the purpose. On account of the two few entrances, the empty boxes could not be got away quick enough.

Another objection lay in the grouping of the countries. The exhibition building was so divided that one-half of the space was given to the home country, England or France, and the other half to foreign countries. The consequence of that arrangement was that the goods of one nation were dragged through the space of another, boxes often went astray and had to be looked for through all kinds of foreign departments.

The want of sufficient light, or rather, I should say, the unequal distribution of the light, was another drawback. Many portions of the buildings had too much light, while others were quite in the shade. This circumstance gave rise to a great many complaints.

We regret, however, to have to add to this extract from the Baron's lecture that all the above difficulties were not avoided at Vienna. For instance, the leak of rain through the roof was not prevented. On one occasion, after a storm, we ourselves counted seventy-eight separate leaks through the plate-iron roof of the rotunda; the canvas lining, however, protected the articles below. We have learned also since leaving Vienna that during the prevalence of some heavy storms many of the courts and galleries were found very imperfect in keeping out the rough weather. With regard to the provision of numerous doors, however, for entrance and exit, the Vienna Industrial Palace undoubtedly does show a great improvement upon any previous exhibition building, and the omission of useless galleries prevented annoyance and trouble.

With regard to that portion of the industrial palace which is to be temporary, there is also this consideration to be remembered: temporary and cheap are not synonymous terms when applied to exhibition buildings, for this reason: When designing with such a purpose in view, the first consideration must be to provide proper protection for the articles exhibited, and it must be remembered that some articles require more careful protection than others. A case in point could be easily imagined where one exhibit would require a more costly building to properly protect it for one month than another would for a whole year. At Vienna this was so fully appreciated that the temporary parts of the palace were almost as costly as the permanent portions, the chief difference being made in manner of providing foundations.

If the superstructure of our temporary buildings is made so cheaply

as not to afford satisfactory protection against fire and weather, the very object for which they are intended will be defeated. Exhibitors will not trust their goods where the risk is very great.

The importance of proper railway communications, which shall bring building-material and exhibits, and afterward transfer visitors from the city to the grounds, has already been referred to in our report. The most satisfactory example of the rapid and convenient transfer of people to and from an exhibition building is undoubtedly to be found at Sydenham, near London. An entirely satisfactory arrangement for the carrying and distribution of freight has yet to be devised.

The experiences at Paris, 1867, and Vienna, 1873, also impress one with the conviction that it seriously affects the gross receipts of an exhibition not to have the work upon the buildings and grounds completed at the time of the opening ceremonies. Buildings partly full of scaffolding, showing unfinished plastering, unpacked boxes, and lack of arrangement in all directions, make it impossible that the inauguration should pass off with *éclat*, and the good results from a popular success be assured from the commencement. A poor opening in the presence of so very many of the great from all parts of the world, who are invariably present on such occasions, and invariably expect a creditable display, is not unlike a *faux pas* at the very start.

HENRY PETTIT,

*Special Agent United States Centennial Commission.*



APPENDIX E.  
MISCELLANEOUS.

---

ACTION OF THE EXECUTIVE BRANCH OF THE NATIONAL  
GOVERNMENT.

---

*By the President of the United States of America.*

A PROCLAMATION.

Whereas by the act of Congress approved March third, eighteen hundred and seventy-one, providing for a national celebration of the one hundredth anniversary of the Independence of the United States, by the holding of an International Exhibition of arts, manufactures, and products of the soil and mine, in the city of Philadelphia, in the year eighteen hundred and seventy-six, it is provided as follows :

“That whenever the President shall be informed by the governor of the State of Pennsylvania that provision has been made for the erection of suitable buildings for the purpose, and for the exclusive control by the commission herein provided for of the proposed exhibition, the President shall, through the Department of State, make proclamation of the same, setting forth the time at which the exhibition will open, and the place at which it will be held ; and he shall communicate to the diplomatic representatives of all nations copies of the same, together with such regulations as may be adopted by the commissioners, for publication in their respective countries ;”

And whereas his excellency the governor of the State of Pennsylvania did, on the twenty-fourth day of June, eighteen hundred and seventy-three, inform me that provision has been made for the erection of said buildings and for the exclusive control by the commission provided for in the said act of the proposed exhibition ;

And whereas the president of the United States Centennial Commission has officially informed me of the dates fixed for the opening and closing of the said exhibition, and the place at which it is to be held :

Now, therefore, be it known, that I, Ulysses S. Grant, President of the United States, in conformity with the provisions of the act of Congress aforesaid, do hereby declare and proclaim that there will be held, at the city of Philadelphia, in the State of Pennsylvania, an International Exhibition of arts, manufactures, and products of the soil and mine, to be opened on the nineteenth day of April, anno Domini eighteen hundred and seventy-six, and to be closed on the nineteenth day of October, in the same year.

And in the interest of peace, civilization, and domestic and international friendship and intercourse, I commend the celebration and exhibition to the people of the United States ; and, in behalf of this Government and people, I cordially commend them to all nations who may be pleased to take part therein.

In testimony whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington, this third day of July, one thousand



eight hundred and seventy-three, and of the Independence of the United States the ninety-seventh.

[L. S.]

U. S. GRANT.

By the President :

HAMILTON FISH,

*Secretary of State.*

# REMARKS ON BEHALF OF PRESIDENT GRANT, MADE BY THE HON. GEORGE M. ROBESON,

July 4, 1873, at Philadelphia, when the grounds selected for the exhibition-site in Fairmount Park were transferred and dedicated, and the proclamation was made public, the President having been prevented from attending in person by being called to the death-bed of his father.

“MR. PRESIDENT AND GENTLEMEN : In making this proclamation *the President desires to express his deep personal interest in the object of your great enterprise, his sympathy with your patriotic endeavors, his appreciation of the fitness of the place and the occasion designated, his earnest desire that “all nations” will take part in this exhibition of human industry and skill on the great memorial occasion of a people whose energies are drawn from every land, and his hope and confidence that in its spirit and its success the “exhibition and celebration” will remain a lasting illustration of peace and civilization, of domestic and international friendship and intercourse, and of the vitality of those great principles which lie at the foundation of human progress, and upon which depend our national strength, development, and safety. With this expression, the great exhibition is commended to the patriotism of our whole people and the co-operation of the world.*”

The above proclamation was sent to foreign governments with the following note:

*Form of note sent by Secretary of State to foreign ministers accredited to the United States.*

DEPARTMENT OF STATE, Washington, July 5, 1873.

SIR : I have the honor to inclose, for the information of the government of ———, a copy of the President's proclamation, announcing the time and place of holding an International Exhibition of arts, manufactures, and products of the soil and mine, proposed to be held in the year eighteen hundred and seventy-six.

The exhibition is designed to commemorate the Declaration of the Independence of the United States, on the one hundredth anniversary of that interesting and historic national event, and at the same time to present a fitting opportunity for such display of the results of art and industry of all nations as will serve to illustrate the great advances attained, and the successes achieved, in the interest of progress and civilization, during the century which will have then closed.

In the law providing for the holding of the exhibition, Congress directed that copies of the proclamation of the President, setting forth the time of its opening and the place at which it was to be held, together with such regulations as might be adopted by the commissioners of the exhibition, should be communicated to the diplomatic representatives of all nations. Copies of those regulations are herewith transmitted.

The President indulges the hope that the government of ——— will be pleased to notice the subject, and may deem it proper to bring the



exhibition and its objects to the attention of the people of that country, and thus encourage their co-operation in the proposed celebration. And he further hopes that the opportunity afforded by the exhibition for the interchange of national sentiment and friendly intercourse between the people of both nations may result in new and still greater advantages to science and industry, and at the same time serve to strengthen the bonds of peace and friendship which already happily subsist between the government and people of ————— and those of the United States.

I have the honor to be, sir, with the highest consideration, your obedient servant,

*A similar communication was addressed to the ministers of the United States accredited to foreign governments.*

### GENERAL REGULATIONS.

First. The International Exhibition of 1876 will be held in Fairmount Park, in the city of Philadelphia, in the year eighteen hundred and seventy-six.

Second. The date of opening of the exhibition will be April 19, 1876, and of closing will be October 19, 1876.

Third. A cordial invitation is hereby extended to every nation of the earth to be represented by its arts, industries, progress, and development.

Fourth. A formal acceptance of this invitation is requested previous to March 4, 1874.\*

Fifth. Each nation accepting this invitation is requested to appoint a commission, through which all matters pertaining to its own interests shall be conducted. For the purpose of convenient intercourse and satisfactory supervision, it is especially desired that one member of each such commission be designated to reside at Philadelphia until the close of the exposition.

Sixth. The privileges of exhibitors can be granted only to citizens of countries whose governments have formally accepted the invitation to be represented, and have appointed the aforementioned commission, and all communications must be made through the governmental commissions.

Seventh. Applications for space within the exposition buildings, or in the adjacent buildings and grounds under the control of the Centennial Commission, must be made previous to March 4, 1875.

Eighth. Full diagrams of the buildings and grounds will be furnished to the commissioners of the different nations which shall accept the invitation to participate.

Ninth. All articles intended for exhibition, in order to secure proper position and classification, must be in Philadelphia on or before January 1, 1876.\*

Tenth. Acts of Congress pertaining to custom-house regulations, duties, &c., together with all special regulations adopted by the Centennial Commission in reference to transportation, allotment of space, classification, motive-power, insurance, police rules, and other matters necessary to the proper display and preservation of materials, will be promptly communicated to the accredited representatives of the several governments co-operating in the exposition.

PHILADELPHIA, November, 1873.

\*See General Regulations for Foreign Exhibitors, p. 22, in which these regulations are modified.

The above regulations were adopted by the United States Centennial Commission by virtue of authority conferred by the acts of Congress approved March 3, 1871, and June 1, 1872.

*The above regulations were sent officially to foreign governments with the same note which communicated the President's proclamation.*

A.—For President's executive order providing for a collective exhibition by the Executive Departments and the order for the appointment of the board of management for the purpose, see pages 368 and 369.

---

### ACCEPTANCE OF THE GERMAN EMPIRE.

*Extract from Prince Bismarck's instruction to the German envoy at Washington.*

\* \* \* \* \*

I request you respectfully to communicate to the Secretary of State, Mr. Fish, that the German Empire accepts with sincerest thanks the invitation of the Government of the United States of America to take part in the above-mentioned exhibition. The appointment of a special commission for the exhibition, as also a plenipotentiary residing in Philadelphia, will therefore be made in time.

I reserve a special communication in this matter, and beg to be furnished with the rules, proposed under No. 10 of the general regulations, as soon as the same shall have been published.

The chancellor of the Empire,

BISMARCK.

---

### ACCEPTANCE BY THE NETHERLANDS.

*Mr. de Westenbergh, the minister of the Netherlands, to Mr. Fish.*

I have the honor to inform your excellency that the government of the Netherlands has received this international invitation with lively satisfaction, and intends to take part in the said exposition by contributing productions of the arts and industry of the Netherlands.

To this effect a commission will be appointed in the Netherlands, and also a committee to direct and furnish information to exhibitors.

As soon as it shall be in my power, I shall hasten to communicate to your excellency the names and quality of the persons who are to constitute this committee.

\* \* \* \* \*

WESTENBERG.

LEGATION OF THE NETHERLANDS.

---

Belgium, Sweden and Norway, Switzerland, Mexico, Ecuador, Hayti, and the Sandwich Islands have also accepted, and the resident commissioner for Ecuador has presented his credentials at Philadelphia, and considerable appropriations have been already made by some of these governments to enable their Commissions to go on with the work.



## FINANCIAL CONDITION AND WANTS OF THE INTERNATIONAL EXHIBITION OF 1876.

The United States Centennial Commission and the Board of Finance were duly organized, and have presented to the people full information of the purposes and scope of the exhibition and celebration by every means at their command.

Through the press and through the mails, addresses and circulars to the public were disseminated, informing them that the national banks throughout the country were empowered to receive subscriptions, and were supplied with the necessary books and forms. No satisfactory results have been realized from these efforts, except in Pennsylvania, which State stands pledged for about three million dollars, upon the following basis, viz: one and a half millions of private subscriptions, one million conditionally appropriated by the State, and a half million by the city of Philadelphia; both appropriations to be expended in the erection of a memorial building, which is to be used as the fine-art gallery. And these two amounts are not available for the other buildings of the exhibition. Philadelphia has also furnished seventy-five thousand dollars for the payment of the expenses of the commission in its earlier work.\*

In other States, and in the Territories, some of the people are awaiting the action of Congress upon the question of invitations and appropriations, while the influences of the financial troubles deter others from any considerable subscriptions. It is the expectation of the people that Congress will do what under the circumstances is necessary to secure the success of the Exhibition and the celebration of which it is the demonstrative element.

Whenever the question of an appropriation shall arise, it will remain for Congress to disburse the money in such installments as shall be most convenient for the Treasury, and with the strongest and wisest safeguards that can be devised. Obviously, the Government would appoint some of the directors.

---

## SPECIAL ADVANTAGES CLAIMED FOR THE EXHIBITION OF 1876.

A careful study has been made of the official reports of former international exhibitions, resulting in the conviction that we have all the requisites for success in the undertaking, except the proper form of invitation to foreign governments and the pecuniary aid from the National Government necessary to impart to the exhibition dignity and proportions commensurate with its memorial character.

We have now more time than most nations have had for their preparations.

We have greater facilities for rapid construction and organization of such an exhibition.

We have the command of a more varied and interesting collection of materials for the national and American continental department of the Exhibition.

---

\* Since the above was written, the municipal government of Philadelphia has appropriated another million of dollars, and the people of that city are raising by subscription still another million.



We have the counsel and the services of persons of large experience in international exhibitions, and offers of services from others.

We have the finest site, in its adaptation to the purposes of the Exhibition, in its convenience of access and beautiful surroundings, ever occupied for such an occasion.

We have a plan of building combining, with due economy of construction, the best features of the buildings used at Paris in 1867, in regard to the arrangement and assimilation of objects, and that at London of 1851 in extensive vistas, imposing general effect, and great central spaces for the free circulation of visitors.

The building-plans, with the most complete railway approaches ever devised in such a case, are all ready; and if our funds justified it, we could begin building in thirty days.

We have a hundred years of progress to celebrate such as history has not recorded of any other nation.

---

### THE EXHIBITION, NATIONAL AND INTERNATIONAL.

The Exhibition is referred to in the acts of Congress as a national celebration, to be held under the auspices of the Government of the United States.

The Commission is national, each member having been commissioned by the President of the United States, and the Commission is required to report to him and to Congress, and to render a final account of stewardship to the President of the United States.

The Secretary of the Treasury is, as provided by law, to prepare certificates of stock.

The Exhibition is nationally commemorative of the greatest event in our history—our very birth as a nation.

One of the leading objects of the Exhibition, declared in the act, is a comparison between the evidences of our progress in a century and that of other nations. The essential condition for this is that the Exhibition shall be international, and that was the very basis and fundamental idea of the act approved March 3, 1871, for the reason that it was the only way of showing, by an appeal to results and demonstration, the comparative condition of the arts and their progress in the several nations of the world.

The first and essential step for an international exhibition in the United States is an invitation from the Government of the United States as explicit and direct as those which have been addressed to it by other governments.

The reason for a formal invitation is this: foreigners (with the rare exception of a very few enterprising individuals) never take part in an international exhibition, save when they are protected and regulated by commissioners from their own government; and no government ever appoints commissioners unless it has been invited to co-operate. Therefore, to proclaim an international exhibition without inviting foreign governments to appoint commissioners is futile. Such an invitation has practically been sent in this case, but a technical question has arisen concerning the strict legal right to send it.

We have proclaimed to the world that we will celebrate the occasion by an international exhibition in which we have challenged all countries to a comparison of achievements and progress for the century. The President has officially commended this national enterprise to foreign nations.



We have accepted invitations to three great international exhibitions, viz., from Great Britain in 1851, France in 1867, and Austria-Hungary in 1873, and our citizens have been exhibitors at several others. How would it look for us, after having accepted such hospitalities, and after having announced our intention to reciprocate them at a similar course, to be held at a specified time, within our own country, to give notice that we abandon the enterprise for any cause which it was within the power of Congress to remedy? Or what will the people say, when 1876 has come and gone, if we shall have had a miserable, half-developed exhibition and national celebration, because their legislators were too short-sighted to perceive the incalculable advantages of a complete and successful one?

#### SOME OF THE BENEFITS OF INTERNATIONAL EXHIBITIONS.

Progress in the experience in such exhibitions shows more and more the necessity of fixing the fees of admission at such a rate as will enable the greatest number of people to enjoy instruction from their teachings. The nations in which they are held derive great, immediate, and direct benefits by attracting throngs of strangers, who expend large sums of money in ways which increase the revenues; but still greater direct advantages which, if not so immediately realized, are no less certain and more extensive. If this be true of European states, how much more so must it be of our young nation, with all its inducements for immigration of those trained to the industries and arts of Europe, and its vast areas in all directions open to settlement and development? New industries are also suggested and created, giving more varied and profitable employment to capital and labor. Old industries and arts are improved and cheapened by the improved machines and tools, methods and processes; and by scientific combinations, materials before unknown are utilized. Articles, implements, machines, and fabrics of common use are extensively advertised, and increased sales result. All these results tend largely to the increase of national wealth and the national revenues, and open the way to a decrease of taxation.

These benefits, and those which accrue to the general community of nations in various ways, have secured the recognition of international exhibitions as among the most potential instrumentalities in promoting progress, especially in the countries in which they are given; and have caused it to be established as a usage that the nations in which they are held should appropriate liberally from the national funds to secure the privilege of holding them, and their success as national undertakings. Such a use of money cannot be considered as 'outcome, for it is more productive of never-ceasing benefits and income than any use that can be made of it.

The most rapid development of new industries is due to international exhibitions. There will be found the representatives of manufacturing capital and enterprise of the world, studying with shrewd and eager scrutiny the whole field of invention and discovery, alert to be the pioneers in the introduction of some new manufacture, the demand for which can be made universal or very extensive. This causes a constant increase of profitable employment for mechanics.

In this manner the manufacture of sewing-machines, articles made of India-rubber, hand and machine tools, articles of use and beauty, large and small, of every kind, has been either created or stimulated by international exhibitions to an extent beyond all computation. But this is only one out of many ways in which the productive energies of the



world are stimulated, and the convenience and comfort of mankind promoted, resulting from bringing together the products and processes of universal industry and invention.

A youthful nation like our own, in presenting specimens of minerals, soils, agriculture, and natural resources of the several States, and the statistics showing the quantity, quality, and location of land open to settlement, the coal and iron districts, the silver and gold deposits, the copper and other metalliferous treasures in which our country abounds, will derive advantages peculiar to itself, and too obvious to need detailing.

Our meager exhibitions at London, Paris, and Vienna, though they produced profound impressions of the extent of the resources of the country and of the inventive skill of the people, are but slight indications of what would be the vast and varied results of a just and complete presentation of all of our resources, arts and products.

A moment's reflection will show that the constant assembling and association of people from widely separated and sometimes discordant sections of our country, during six months, in 1876, for the purpose of renewing the most patriotic memories and studying, with advantages never before afforded, our marvelous progress and resources, will greatly stimulate an honorable national pride, and do more to promote warm and complete brotherly reconciliation than volumes of legislation.

The common sense of the nineteenth century has recognized the immense advantages of such exhibitions. One of their good results is to school the public mind in the all-important principles of thorough practical classification and organization of arts, sciences, industries, forces, and productions. Those principles are the basis of that true progress which is rapidly enabling man to extend his dominion over the material world, and to devote more of time to self-culture and to the development of the mental and moral capacities among the people.

But the acceleration to the movement of progress resulting from such exhibitions is due to many other causes, all tending to the benefit and instruction of mankind.

They acquaint the nations with the natural resources, commercial capacities, and industrial aptitudes of each other, and with the deficiencies which each has occasion to supply through the channels of trade.

They are practical tests of the natural economy of industries.

They develop new industries, enlarging the sphere for the profitable employment of labor.

They have developed new uses for the secondary products of manufactures and chemical processes which have previously been thrown away as waste.

They are schools for the artisan, who in a few days can learn there more pertaining to the industry in which he is engaged, as it is practiced throughout the world, than in a life-time of plodding in his shop.

They point out to the consumer, through the judgment of experts, the best products of every kind, securing the reward to the most meritorious producers, and exciting the emulation of all to reach the highest grade of excellence.

The late Wm. H. Seward, when Secretary of State, said of them, in communicating to Congress the United States Report on the Paris Exposition in 1867 :

Their beneficent influences are many and widespread; they advance human knowledge in all directions. Through the universal language of the products of labor, the artisans of all countries hold communication; ancient prejudices are broken down; nations are fraternized; generous rivalries in the peaceful fields of industry are excited; the tendencies to war are lessened, and a better understanding between capital and labor is fostered. \* \* \* One of their most salutary results is the promotion of



an appreciation of the true dignity of labor and its paramount claims to consideration as the basis of national wealth and power. Such exhibitions have become national necessities and duties.

Mr. N. M. Beckwith, the United States Commissioner-General at the Paris Exposition, in a letter of April 3, 1865, wrote to the American minister, Mr. Bigelow, as follows:

The value of French exports last year was \$581,000,000, and shows an increase of 51 per cent. in four years.

This growth of the external commerce is but the index of the greater growth of the internal commerce, resulting from the increased productiveness imparted to labor, skill, and capital; and the increased productiveness is traceable in details directly to the application of the sciences to the industrial arts.

If it be true that civilization was led in most countries for a long period by a few men of genius, skilled in political science and literature, it is not less true that the men of physical science have at length come to their aid.

The geologists, naturalists, chemists, mineralogists, inventors, and engineers are now directing the labor of the world with a success never before attained.

As the intellectual domination of the material world increases, the hardships and barrenness of toil diminish, and its products multiply; and while political science emancipates the enslaved races, physical science enslaves the elements and forces of nature, and emancipates mankind.

In this great movement the largest benefits will fall, with the largest markets in the world, to those who make the best provision for the development and diffusion of the practical sciences as applied to industry.

No nation produces within itself all these in perfection, nor keeps up with the daily progress in them; but those are most advanced in the race who adopt the best methods of collecting and disseminating the progressive knowledge resulting from the studies and labors of all.

Among the methods for this purpose international assemblies and exhibitions are increasing in numbers, in frequency, and in importance.

A knowledge of many of the useful and successful combinations of science and industrial art cannot be conveyed in words; they must be studied in models and specimens, which display at once the combinations and effects, the modes and results.

These being the products of many localities and many countries, bringing them together, facilitates their study, and affords, at the same time, the opportunity of careful and accurate comparisons, without which no study is complete.

#### THE EFFECT OF AWARDS OF PRIZES, MEDALS, &C.

In regard to the benefits from a system of awards, Commissioner-General Beckwith says:

Experience on former occasions has, in the main, justified the awards of the juries, and they have served not only to confirm established reputations, but to bring into more prominent notice the excellent products of thousands of skillful and worthy producers, who labored previously in comparative obscurity, and whose improved fortunes date from those periods. But the benefits resulting from this are not limited to the successful exhibitors. They are naturally stimulated to renewed efforts to maintain their new positions, which quickens their invention, improves their products, and raises their own standards, while their rivals and competitors, who, if equally skillful, are less lucky, are thereby compelled to work up to this higher level. A new spirit is thus breathed into every department of industry, and the benefits of increased production, improved qualities and varieties, and diminished cost become universal.

The competition and emulation thus aroused become international; and national measures designed to stimulate progress in the decorative arts applied to industry, as well as in the application of science to manufactures, agriculture, and mining, have been the results throughout Europe of the great expositions.

Prince Albert said of the exhibition of 1851: The intention was—

To give a true test and a living picture of the point of development at which the whole of mankind had arrived in this great task, and a new starting-point from which all nations will be able to direct their further exertions.



## EFFECTS ON NATIONAL INDUSTRY AND ART.

In a paper read by Lord Henry G. Lennox, M. P., before the Society of Arts, January 24, 1866, he observed:

It may be and is undoubtedly true that as a nation we were, at the exhibition of 1851, not equal to the French in our designs, and in our appreciation of artistic beauty of form; but it is also true that at the exhibition of 1862 our inferiority was admitted on all hands to be unspeakably less apparent than it had been eleven years before on a similar occasion.

When the exhibition was over and the results known, never was public opinion more unanimous than in declaring that the great exhibition had succeeded in clearly manifesting the existence of certain principles, that, if carried out, would confer a solid benefit on those engaged in manufactures and commerce, by bringing about, in the memorable words uttered by the late prince consort at Birmingham, "The introduction of science and art as the unconscious regulators of productive industry."

The following extracts from a very able and instructive address on modern industrial progress, by President F. A. P. Barnard, of Columbia College, New York, on the opening of the forty-first annual exhibition of the American Institute of that city, are presented as indicating some of the most important contributions to the industrial progress of the century which have originated in the United States, which can and will be shown in their full development and perfection at the international exhibition at Philadelphia in 1876, with many more from the same source:

## AMERICA IN THE CONCOURSE OF INDUSTRIES.

In conclusion, the inquiry naturally presents itself, where are we, the industrials of the United States, in this great concourse of nations, and what is the part which we are contributing to the march of industrial improvement? The reply, I believe, will be one of which we need not be ashamed. There is hardly an industry to the progress of which we have not largely contributed. The cotton-gin, without which the machine-spinner and the power-loom would be helpless, is American. The power-shuttle, which permits an unlimited enlargement of the breadth of the web, is American. The planing-machine is American. Navigation by steam is American. The mower and reaper are American. The rotary printing-presses are American. The hot-air engine is American. The sewing-machine is American. The machine-manufacture of wool-cards is American. The whole India-rubber industry is American. The band-saw originated, I believe, in America. The machine-manufacture of horseshoes is American. The sand-blast, of which the large capabilities are yet to be developed, is American. The gauge-lathe is American. The only successful composing-machine for printers is American. The grain-elevator is American. The artificial manufacture of ice, which you saw exhibited here two years ago under the name of the Carré process, was originally invented by Professor Alexander S. Twining, an American. The electro-magnet was invented, and immediately after its invention was first practically applied in transmitting telegraphic signals, by Professor Joseph Henry, an American. The telegraphic instrument introduced a few years later into public use, and which has since obtained universal acceptance, was invented by Professor Samuel F. B. Morse, late one of the regents of our institute, an American.

He also said, with reference to the

## BENEFITS OF INTERNATIONAL EXPOSITIONS.

And now, let me ask, what must be the effect of notices like these, widely circulated throughout England and the whole continent of Europe, upon the substantial interests of our country? I say the substantial interests, though I am not insensible to the concomitant advantages which may be more properly called sentimental, the increased respect which such displays, and such critical judgments pronounced upon them, must secure for us as an intelligent people, and a people among whom intelligence is honored; but I say the substantial interests, meaning thereby the enlargement of the demand for our productions, involving as natural consequences the increase of our foreign commerce, the growth of our manufactures, and the more rapid development of our vast national resources still unimproved. This exposition was



visited, first or last, by more than ten millions of people.\* These notices were read, doubtless, by several millions. And these visitors and these readers were of every kindred and people and tongue and nation under the sun. Is it nothing to bring purchasers directly into contact with the articles they need? Is it nothing to bring industrials into the immediate presence of machines or implements or materials which reveal to them at the first glance new sources of power? Since it is self-evidently true that no industry can work its way upward unless it is known of those whom it is adapted to benefit; since, therefore, extensive advertising is admitted to be an essential condition of every industrial success, what possible expedient can be conceived better adapted to create expeditiously a demand for any article having in it merit enough to recommend itself, than that of placing it before the world in a great international exposition?

TIME A VITAL ELEMENT.

At this juncture the success of the national celebration, upon the basis of internationality decreed by existing acts of Congress, and under that authority officially announced to foreign nations, depends as much upon the immediate action as upon the character of the action of Congress. The facts are before them, and the responsibility to the people of our own country, as well as to the public opinion of mankind, rests upon them.

For other references to the subject of benefits to be derived from the international exhibition, see the paragraph at the foot of page 6 of this volume; also pages 272, 273, 274; also the following letter from the New York commissioners, and the paper by Mr. Campbell which follows it.

*Extract from letter addressed by Messrs. N. M. Beckwith and Charles H. Marshall, commissioners from New York, to Senators and Representatives from that State.*

NEW YORK, January 12, 1874.

SIR: The United States Centennial Commission under the act of Congress, March 3, 1871, "to provide for the celebration of the one hundredth anniversary of American independence," has advanced in its work to a point where the further action of Congress becomes necessary.

I venture, therefore, to solicit your attention to the subject.

The building committee is now ready to commence the requisite constructions in Fairmount Park. No more than time for their completion remains before the reception of products, and their installation must begin.

\* Mr. Chevalier, editor of the official reports of the juries of the universal exposition of 1867, gives the following as the numbers of the persons admitted to the several successive international expositions, beginning with that held in 1851, in London, viz.:

Year.	Paying visitors.	Where held
1851 .....	6,039,000	London.
1855 .....	5,162,000	Paris.
1862 .....	6,211,000	London.
1867 .....	9,921,686	Paris.

In this last total are counted 55,000 season tickets, and 90,000 tickets giving admission for a week. Mr. Chevalier thinks these last may be counted equal to three admissions at least; so that the total exceeds ten millions, as stated above. To the number of visitors may very properly be added the number of exhibitors who were admitted free. This number was, in 1867, 50,226; and their assistants were more numerous than themselves. To put the total number of all who saw the exposition at 10,000,000 is, therefore, a statement considerably within bounds.

But the Centennial Commission does not feel warranted in proceeding with these extensive constructions without the assurance of additional means for their completion.

The amount of reliable contributions and available resources does not at present exceed three and a half millions of dollars, which is much less than the buildings will cost.

The early decision of Congress, therefore, as to the money it will contribute and the further aid it will render is of pressing urgency for the guidance of the Commission. The expectation which almost universally prevails that Congress will soon or late vote a sum of money for the purpose in question is undoubtedly well founded.

If the celebration could conveniently be made entirely by private contributions, the opinion would still remain that such a result is not in all respects desirable. Government, as representing the people in their united national capacity, and acting in presence of the representatives of other invited governments and nations, may naturally be expected to take a leading part in the ceremonies intended to celebrate its own nativity.

The solemn commemoration of the historical event which made this people a nation, should be in every way pre-eminently national. It concerns not alone this Government and people, but touches in all directions the great interests of civilization. The origin and means of the celebration, as well as its plan and method, should, therefore, correspond with the gravity and dignity of the occasion.

The exhibition of useful products forms a conspicuous element of the plan, and its influences, beyond the immediate purpose connected with the commemoration, will be of general utility and lasting benefit. A collection of the most advanced products of industry, art, skill, invention, and science is instructive at all times and to all men. On this occasion it will appropriately display the productive power of the nation in all the departments which contribute most to ameliorate the condition of man, and it will at the same time indicate the degree of excellence attained in those departments under the influences of the peculiar social and political systems which are the direct results of the significant and fruitful event to be celebrated.

The exhibition will also, as all experience demonstrates, impart fresh vigor to industries of every useful kind, and form a new starting-point for quicker progress and improvement.

Congress has already expressed itself by its approval and sanction of the plan proposed. It has also nationalized it in some degree by placing the Federal Executive (in a manner) at the head of it, and by announcing the intended celebration by proclamation of the President.

In view of these proceedings, and of similar considerations, there is evidently ground for the general belief that Congress, acting for the people in their united capacity, will contribute to the expenses of the projected exhibition. The public character and importance of the work and the necessity for early action will, I doubt not, recommend it to your favorable consideration.

\*

\*

\*

\*

\*

\*

\*



## THE CENTENNIAL CELEBRATION AND INTERNATIONAL EXHIBITION OF 1876.

EXTRACTS FROM A PAPER BY PROFESSOR JOHN L. CAMPBELL, OF INDIANA,  
SECRETARY TO THE UNITED STATES CENTENNIAL COMMISSION,

On the nature and propriety of the international comparison contemplated in the acts of Congress providing for the national celebration by an international exhibition.

### *The Philosophy of Progress as developed in America.*

Hildreth, in the introduction to his valuable history of the United States, remarks, "It is due to our fathers and ourselves, it is due to truth and philosophy, to present for once on the historic page the founders of our American nation unbedaubed with patriotic rouge, wrapped up in no fine-spun cloaks of excuses and apology, without stilts, tinsel, or bedizzenment, in their own proper persons, often rude, hard, narrow, superstitious, and mistaken, but always earnest, downright manly and sincere. *The result of their labors is eulogy enough ; their best apology is to tell their story exactly as it was.*"

For the purpose of illustrating in the fullest and fairest manner these results, and to tell this old story exactly as it was, the Congress of the United States, by acts approved March 3, 1871, and June 1, 1872, provided for celebrating the one hundredth anniversary of American Independence, by holding an International Exhibition of arts, manufactures, and products of the soil and mine, at Philadelphia, in 1876. By the provisions of these *two acts* the people of the United States are now fairly committed to this grand undertaking, and it becomes the duty of every American to aid in securing its complete success.

If the true ideal of the Centennial Exhibition be realized, there will be presented a full panorama of progress for a century—not of America only, but of the world,—that ample opportunity may be afforded, on the broadest scale, with the best facilities, for the most rigorous comparison and the deduction of the most comprehensive generalizations.

By this test we shall discover the true value of our national experiment of self-government. The true life and progress of a nation cannot be understood by the study of individual character, or of passing events as presented by the daily newspaper, or even the acts of a generation.

In individual life there is little variation in the routine of experience from birth until death, but there is in a succession of lives a generic manhood which becomes better and stronger by each repeating. In the experiences of centuries manhood is rising to a higher and purer life, and this progress, although tardy, is a certain return to primitive perfection.

The discovery of this progressive humanity is not easy. It is found chiefly in the successes and failures of various forms of government, by which the race is approaching the true relation of ruler and subject,—of labor and capital,—of personal liberty and public necessity. It exists prominently in the laws, the agriculture, the commerce, the literature and the art of successive ages ; in simplification of forms and adjustment of penalties,—in newer and easier methods of sowing, tilling, and gathering,—in speedier modes of transportation,—in improved and diffused facilities for mental culture. It belongs to personal development in body and mind as affected through a series of generations by soil and climate. Scattered through all these are the elements of real and true progress—and here are the very difficult lessons for the student in the higher culture.

The century under review, from 1776 to 1876, may with emphasis be



designated the age of *freedom* and *invention*. It is an old claim that monarchical forms of government are better suited to high culture,—and now it is proposed to test this claim by the *centurial experiment*.

\* \* \* \* \*

Our departure from our English home in 1776 may have been somewhat unceremonious, but this was due more to an accidental weak head than from want of love in the great motherly heart. The interval of a century has caused the disappearance of personal animosity, and we are prepared to celebrate the battle of Lexington and the surrender at Yorktown with no feelings of partisan success, but as the beginning and end of a struggle for the new principle. The results of this triumph are shared alike by both parties in the contest of 1776,—for, next to America, England is the freest nation on earth. Henceforth and forever the great English-American brotherhood is to be not only free, but together to join all the nations of the earth in progress to a higher life. We remember now less of our trials and more of the blessings of our common Anglo-Saxon family—and, in accepting the inexorable logic of events, rejoice that the best and purest hopes of the race are committed to such strong heads and warm hearts.

\* \* \* \* \*

The era we celebrate was also the beginning of the great period of *invention*.

In 1763 the clumsy engine of Newcomen was failing, and the mines of England were yielding slowly to the encroaching water,—old leads were exhausted, and deeper depths were impossible. Fortunately, one of these machines was sent to the shop of Watt for repairs, and the result was the invention of the engine which has more than quadrupled the capabilities of the world. The glimmer of the great invention dates back to Hero, 120 B. C.; then Blasco de Garay, 1543; Salomon de Caus, 1615; Giovanni Branca, 1629; Worcester, 1663; Morland, 1683; Papin, 1695; Savery, 1698; Newcomen, 1705; Watt, 1763–1782. The actual cost of running one of Watt's engines compared with a Newcomen was one-fourth the fuel for the same work, so that every pound of waste by combustion contributed three times the amount of useful motion for producing the comforts of life.

When it is remembered that motion is the chief necessity in all the processes of life, in planting and reaping, in picking and pruning, in converting ores to metals and material to manufactured articles, the inestimable value of a new motor, or the more economical use of one already known, becomes manifest. The direct contribution of Watt to the wealth of the world cannot be estimated.

The first steam-engine in America was a Newcomen erected by Mr. Hornblower, at Passaic, New Jersey. The first engine built in America was constructed by Christopher Colles, in Philadelphia, October, 1772.

Not the least of the attractions of the exhibition in 1876 will be the reproduction of Fitch's six-oared boat, worked by his tub-like engine, in contrast with Daniel Drew's Hudson River palaces of this day,—and of Evans' car with wheels for land and paddles for water, the amphibious precursor of the Pullman of our times.

Oliver Evans was regarded as a lunatic for asserting, in 1815, "that the time will come when people will travel in stages moved by steam-engines at *fifteen to twenty miles* per hour!—That a carriage will leave



Washington in the morning, breakfast at Baltimore, dine at Philadelphia, and sup at New York on the same day!—That railways will be laid of wood or iron or on smooth paths of broken stone to travel as well by night as by day!" In 1827 there were two short railroads in our country,—one at Quincy quarries, the other at Mauch Chunk mines,—now they are everywhere.

"By the Briarean might thy hands supply,  
We cook, we ride, we sail, and soon shall fly!  
Mind marches; soon the glorious day will break  
When we may sit, our hands within our breeches;  
When *steam* will plow, sow, reap, grind, knead, and bake,  
And our sole task be to digest earth's riches!  
Soon iron muscle will leave nought to do,  
And slave and master both may cease from labor,  
When giant steam, with never-tiring hand,  
Shall toil—the only slave throughout the land!"

In the mine and on the mountain,—in home work or foreign travel,—by night or by day,—everywhere and at all times, steam is man's best and most obedient servant.

The International Exhibition of 1876 will differ essentially from the exhibitions at London, Paris, and Vienna, in that it will, more fully than was attempted in the others, be an illustration of the progress of invention. Baldwin & Co., of Philadelphia, have the first locomotive manufactured in this country, and it is proposed to place this next to one of their most finished modern machines. The reaping-hook of 1776,—the cradle of a later day, and the reaper of our time,—the wooden plow of the olden time, and the steel one of to-day,—the hand-card and hand-loom, with the power-loom and spinner of modern use,—the pins and pictures, books and furniture, costumes and clothing, implements and machines, all the endless variety of things, useful or beautiful, for the varying years since 1776—will be collected and grouped for analysis and comparison. To this collection, also, foreign nations are invited to contribute, that there may be afforded the most abundant illustrations of all that pertains to the culture and progress of our race.

The new inspiration from 1876 is our apology for the effort that involves years of earnest labor and millions of money for its accomplishment.

---

*List of members of the United States Centennial Commission.*

OFFICERS.

*President.*—Hon. Joseph R. Hawley.

*Vice-presidents.*—Hons. Alfred T. Goshorn, Orestes Cleveland, Wm. M. Byrd, John D. Creigh, David Atwood, Thomas H. Coldwell.

*Director-general.*—Hon. Alfred T. Goshorn.

*Secretary.*—Hon. John L. Campbell.

*Counselor and solicitor.*—John L. Shoemaker, esq., 611 Vine Street, Philadelphia.

STANDING COMMITTEES.

*Executive committee.*—Daniel J. Morrell, Pennsylvania; Alfred T. Goshorn, Ohio; Walter W. Wood, Virginia; George B. Loring, Massachusetts; Charles H. Marshall, New York; James T. Earle, Maryland;

George H. Corliss, Rhode Island; John G. Stevens, New Jersey; Alexander R. Boteler, West Virginia; Richard C. McCormick, Arizona; William Henry Parsons, Texas; Lewis Waln Smith, Georgia; John Lynch, Louisiana;

*Committee on plans and architecture.*—Alfred T. Goshorn, Ohio; William Henry Parsons, Texas; Orestes Cleveland, New Jersey; Asa Packer, Pennsylvania; Ezekiel A. Straw, New Hampshire; James E. Dexter, District of Columbia; Robert H. Lamborn, Wyoming.

*Committee on tariffs and transportation.*—O. C. French, Mississippi; James T. Earle, Maryland; Joshua Nye, Maine; William F. Prosser, Tennessee; John H. Wickizer, Utah; Asa P. Cate, New Hampshire.

*Committee on finance.*—Asa Packer, Pennsylvania; James Birney, Michigan; John W. Davis, Maryland; William M. Byrd, Alabama; John S. Adams, Florida; Frederick L. Matthews, Illinois; J. Marshall Paul, Colorado.

*Committee on foreign affairs.*—John L. Campbell, Indiana; John G. Stevens, New Jersey; Lewis Waln Smith, Georgia; Charles P. Kimball, Maine; Robert H. Lamborn, Wyoming; Andrew J. Sweeney, West Virginia; Richard C. McCormick, Arizona.

*Committee on opening ceremonies.*—Frederick L. Matthews, Illinois; Samuel Powel, Rhode Island; Henry S. Moody, Nebraska; John McNeil, Missouri; H. Latham, Wyoming; George A. Batchelder, Dakota; Coker F. Clarkson, Iowa.

*Committee on legislation.*—Richard C. McCormick, Arizona; David Atwood, Wisconsin; William F. Prosser, Tennessee; Alexander R. Boteler, West Virginia; Lawrence A. Gobright, District of Columbia; Thomas Donaldson, Idaho; E. W. Gantt, Arkansas.

*Committee on agriculture and live stock.*—Robert Lowry, Iowa; Andrew J. Dufur, Oregon; N. C. Meeker, Colorado; Robert Mallory, Kentucky; Eldridge W. Little, New Mexico; Lawrence Weldon, Illinois; Archibald Cameron, South Carolina.

*Committee on mines and mining.*—William Wirt McCoy, Nevada; Thomas Donaldson, Idaho; J. D. Creigh, California; John Wasson, Arizona; J. Marshall Paul, Colorado; Samuel Hays, Missouri; William H. Claggett, Montana.

*Committee on horticulture and floriculture.*—Thomas H. Coldwell, Tennessee; James W. Haines, Nevada; Edward Penington, Louisiana; E. W. Gantt, Arkansas; Charles P. Kimball, Maine; R. W. Furnas, Nebraska; J. T. Bernard, Florida.

*Committee on fisheries and fish culture.*—Middleton Goldsmith, Vermont; Elwood Evans, Washington Territory; John H. Wickizer, Utah; Edward D. Holton, Wisconsin; James E. Dexter, District of Columbia; John S. Adams, Florida; William H. Parsons, Texas.

#### MEMBERS.

*Alabama.*—William M. Byrd, commissioner, Selma; James L. Cooper, alternate, Huntsville.

*Arizona.*—Richard C. McCormick, commissioner, Washington, D. C.; John Wasson, alternate, Tucson.

*Arkansas.*—E. W. Gantt, commissioner, Little Rock; Alexander McDonald, alternate, Little Rock.

*California.*—John Dunbar Creigh, commissioner, No. 714 Shotwell street, San Francisco; ———, alternate, deceased.

*Colorado.*—J. Marshall Paul, commissioner, Fair Play; N. C. Meeker, alternate, Greeley.



*Connecticut*.—Joseph R. Hawley, commissioner, Hartford; Wm. Phipps Blake, alternate, New Haven.

*Dakota*.—George A. Batchelder, commissioner, Yankton; Solomon L. Spink, alternate, Yankton.

*Delaware*.—Henry F. Askew, commissioner, Wilmington; John H. Rodney, alternate, New Castle.

*District of Columbia*.—James E. Dexter, commissioner, 322 4½ street, N. W., Washington; Lawrence A. Gobright, alternate, Washington.

*Florida*.—John S. Adams, commissioner, Jacksonville; J. T. Bernard, alternate, Tallahassee.

*Georgia*.— ———, commissioner; Lewis Waln Smith, alternate, Philadelphia, Pa.

*Idaho*.—Thomas Donaldson, commissioner, Boise City; James S. Reynolds, alternate, Boise City.

*Illinois*.—Frederick L. Mathews, commissioner, Carlinsville; Lawrence Weldon, alternate, Bloomington.

*Indiana*.—John L. Campbell, commissioner, Crawfordsville; F. C. Johnson, alternate, New Albany.

*Iowa*.—Robert Lowry, commissioner, Davenport; Coker F. Clarkson, alternate, Eldora, Hardin County.

*Kansas*.—John A. Martin, commissioner, Atchinson; George A. Crawford, alternate, Fort Scott.

*Kentucky*.—Robert Mallory, commissioner, La Grange; Smith M. Hobbs, alternate, Mount Washington.

*Louisiana*.—John Lynch, commissioner, Lock Box 980 New Orleans; Edward Penington, alternate, Philadelphia, Pa.

*Maine*.—Joshua Nye, commissioner, Augusta; Charles P. Kimball, alternate, Portland.

*Maryland*.—James T. Earle, commissioner, Centreville, Queen Anne County; John W. Davis, alternate, 25 North Calvert Street, Baltimore.

*Massachusetts*.—George B. Loring, commissioner, Salem; William B. Spooner, alternate, Boston.

*Michigan*.—James Birney, commissioner, Bay City; Claudius B. Grant, alternate, Ann Arbor.

*Minnesota*.—J. Fletcher Williams, commissioner, Saint Paul; W. W. Folwell, alternate, Saint Anthony.

*Mississippi*.—O. C. French, commissioner, Jackson; ———, alternate, ———.

*Missouri*.—John McNeil, commissioner, Compton Hill, Saint Louis; Samuel Hays, alternate, Saint Joseph.

*Montana*.—William H. Clagett, commissioner, Deer Lodge City; Patrick A. Largey, alternate, Virginia City.

*Nebraska*.—Henry S. Moody, commissioner, Omaha; R. W. Furnas, alternate, Brownsville.

*Nevada*.—Wm. Wirt McCoy, commissioner, Eureka, Lander County; James W. Haines, alternate, Genoa.

*New Hampshire*.—Ezekiel A. Straw, commissioner, Manchester; Asa P. Cate, alternate, Northfield.

*New Jersey*.—Orestes Cleveland, commissioner, Jersey City; John G. Stevens, alternate, Trenton.

*New Mexico*.—Eldridge W. Little, commissioner, Santa Fé.

*New York*.—N. M. Beckwith, commissioner, New York City; Charles H. Marshall, alternate, New York City.

*North Carolina*.— ———, commissioner, ———; Jonathan W. Albertson, alternate, Hertford, Perquimans County.

*Ohio.*—Alfred T. Goshorn, commissioner, Cincinnati; Wilson W. Griffith, alternate, Toledo.

*Oregon.*—James W. Virtue, commissioner, Baker City; Andrew J. Dufur, alternate, Portland.

*Pennsylvania.*—Daniel J. Morrell, commissioner, Johnstown; Asa Packer, alternate, Mauch Chunk.

*Rhode Island.*—George H. Corliss, commissioner, Providence; Samuel Powel, alternate, Newport.

*South Carolina.*—William Gurney, commissioner, Charleston; Archibald Cameron, alternate, Charleston.

*Tennessee.*—Thomas H. Coldwell, commissioner, Shelbyville, Bedford County; William F. Prosser, alternate, Nashville.

*Texas.*—William Henry Parsons, commissioner, New York City; John C. Chew, alternate, New York City.

*Utah.*—John H. Wickizer, commissioner, Salt Lake City; Oscar G. Sawyer, alternate, New York City.

*Vermont.*—Middleton Goldsmith, commissioner, Rutland; Henry Chase, alternate, Lyndon.

*Virginia.*—Walter W. Wood, commissioner, Halifax Court-House; Edw. R. Bagwell, alternate, Onancock, Accomack County.

*Washington Territory.*—Elwood Evans, commissioner, Olympia; Alexander S. Abernethy, alternate, Cowlitz County.

*West Virginia.*—Alexander R. Boteler, commissioner, Shepherdstown; Andrew J. Sweeney, alternate, Wheeling.

*Wisconsin.*—David Atwood, commissioner, Madison; Edward D. Holton, alternate, Milwaukee.

*Wyoming.*—Joseph M. Carey, commissioner, Cheyenne; Robert H. Lamborn, alternate, Philadelphia, Pa.

#### OFFICERS OF THE CENTENNIAL BOARD OF FINANCE.

*President.*—John Welsh, Philadelphia.

*Vice-president.*—William Sellers, Philadelphia.

*Directors.*—John Cummins, Massachusetts; John Gorham, Rhode Island; Abraham S. Hewitt and Thomas H. Dudley, New Jersey; Charles W. Cooper, Samuel M. Felton, Pennsylvania; John L. Barbour, Virginia; Robert M. Patton, Alabama; Benjamin F. Allen, Iowa; Daniel M. Fox, Joseph Patterson, Edwin H. Fitler, Thomas Cochran, N. Parker Shortridge, James M. Robb, Edward T. Steel, Clement M. Bid-  
dle, John Wauamaker, John Price Wetherill, Fairman Rogers, and Henry Winsor, Philadelphia.

*Secretary and treasurer.*—Frederick Fraley, Philadelphia.

---

#### ACTS OF CONGRESS RELATING TO CENTENNIAL CELEBRATION.

*Copy of act of Congress creating the commission, approved March 3, 1871.*

- AN ACT to provide for celebrating the one hundredth anniversary of American Independence, by holding an international exhibition of arts, manufactures, and products of the soil and mine, in the city of Philadelphia, and State of Pennsylvania, in the year eighteen hundred and seventy-six.

Whereas the Declaration of Independence of the United States of America was prepared, signed, and promulgated in the year seventeen



hundred and seventy-six, in the city of Philadelphia; and whereas it behooves the people of the United States to celebrate, by appropriate ceremonies, the centennial anniversary of this memorable and decisive event, which constituted the fourth day of July, anno Domini seventeen hundred and seventy-six, the birthday of the nation; and whereas it is deemed fitting that the completion of the first century of our national existence shall be commemorated by an exhibition of the natural resources of the country and their development, and of its progress in those arts which benefit mankind, in comparison with those of older nations; and whereas no place is so appropriate for such an exhibition as the city in which occurred the event it is designed to commemorate; and whereas, as the exhibition should be a national celebration, in which the people of the whole country should participate, it should have the sanction of the Congress of the United States: Therefore,

SECTION 1. *Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled,* That an exhibition of American and foreign arts, products, and manufactures sha'l be held under the auspices of the Government of the United States, in the city of Philadelphia, in the year eighteen hundred and seventy-six.

SEC. 2. That a commission, to consist of not more than one delegate from each State and from each Territory of the United States, whose functions shall continue until the close of the exhibition, shall be constituted, whose duty it shall be to prepare and superintend the execution of a plan for holding the exhibition; and, after the conference with the authorities of the city of Philadelphia, to fix upon a suitable site within the corporate limits of the said city, where the exhibition shall be held.

SEC. 3. That said commissioners shall be appointed within one year from the passage of this act, by the President of the United States, on the nomination of the governors of the States and Territories, respectively.

SEC. 4. That in the same manner there shall be appointed one commissioner from each State and Territory of the United States, who shall assume the place and perform the duties of such commissioner and commissioners as may be unable to attend the meetings of the commission.

SEC. 5. That the commission shall hold its meetings in the city of Philadelphia, and that a majority of its members shall have full power to make all needful rules for its government.

SEC. 6. That the commission shall report to Congress, at the first session after its appointment, a suitable date for opening and for closing the exhibition; a schedule of appropriate ceremonies for opening or dedicating the same; a plan or plans of the building; a complete plan for the reception and classification of articles intended for exhibition; the requisite custom-house regulations for the introduction into this country of the articles from foreign countries intended for exhibition; and such other matters as in their judgment may be important.

SEC. 7. That no compensation for services shall be paid to the commissioners or other officers provided by this act from the Treasury of the United States; and the United States shall not be liable for any expenses attending such exhibition, or by reason of the same.

SEC. 8. That whenever the President shall be informed by the governor of the State of Pennsylvania that provision has been made for the erection of suitable buildings for the purpose, and for the exclusive control by the commission herein provided for of the proposed exhibition, the President shall, through the Department of State, make proclamation of the same, setting forth the time at which the exhibition will



open, and the place at which it will be held; and he shall communicate to the diplomatic representatives of all nations copies of the same, together with such regulations as may be adopted by the commissioners, for publication in their respective countries.

---

[NOT OF GENERAL NATURE—No. 73.]

AN ACT relative to the centennial international exhibition, to be held in the city of Philadelphia, State of Pennsylvania, in the year eighteen hundred and seventy-six.

Whereas Congress did provide by an act entitled “An act to provide for celebrating the one hundredth anniversary of American independence by holding an international exhibition of arts, manufactures, and products of the soil and mine, in the city of Philadelphia, and State of Pennsylvania, in the year eighteen hundred and seventy-six,” approved March third, eighteen hundred and seventy-one, for the appointment of commissioners to promote and control the exhibition of the national resources and their development, and the nation’s progress in arts which benefit mankind, and to suggest and direct appropriate ceremonies by which the people of the United States may commemorate that memorable and decisive event, the Declaration of American Independence by the Congress of the United Colonies assembled in the city of Philadelphia, on the fourth day of July, anno Domini seventeen hundred and seventy-six; and whereas such provisions should be made for procuring the funds requisite for the purposes aforesaid as will enable all the people of the United States, who have shared the common blessings resulting from national independence, to aid in the preparation and conduct of said international exhibition and memorial celebration under the direction of the commissioners of the United States: Therefore,

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That there is hereby created a body corporate, to be known by the name of the Centennial Board of Finance, and by that name to have an incorporate existence until the object for which it is formed shall have been accomplished; and it shall be competent to sue and be sued, plead and be impleaded, defend and be defended, in all courts of law and equity in the United States; and may make and have a corporate seal, and may purchase, take, have and hold, and may grant, sell, and at pleasure dispose of all such real and personal estate as may be required in carrying into effect the provisions of an act of Congress entitled “An act to provide for celebrating the one hundredth anniversary of American Independence by holding an international exhibition of arts and manufactures, and products of the soil and mine, in the city of Philadelphia, and State of Pennsylvania, in the year eighteen hundred and seventy-six,” approved March third, eighteen hundred and seventy-one, and all acts supplementary thereto; and said Centennial Board of Finance shall consist of the following-named persons, their associates and successors from the States and Territories, as herein set forth. [Here follow the names of corporators of the Centennial Board of Finance representing every State and Territory.]

SEC. 2. That the said corporation shall have authority and is hereby



empowered to secure subscriptions of capital stock to an amount not exceeding ten million dollars, to be divided into shares of ten dollars each, and to issue to the subscribers of said stock certificates therefor under the corporate seal of said corporation, which certificates shall bear the signature of the president and treasurer, and be transferable under such rules and regulations as may be made for the purpose. And it shall be lawful for any municipal or other corporate body existing by or under the laws of the United States to subscribe and pay for shares of said capital stock, and all holders of said stock shall become associates in said corporation, and shall be entitled to one vote on each share; and it shall be the duty of the United States Centennial Commission to prescribe rules to enable absent stockholders to vote by proxy. The proceeds of said stock, together with the receipts from all other sources, shall be used by said corporation for the erection of suitable buildings, with their appropriate fixtures and appurtenances, and for all other expenditures required in carrying out the objects of the said act of Congress of March third, eighteen hundred and seventy-one, and which may be incident thereto. And the said corporation shall keep regular minutes of its proceedings, and full accounts, with the vouchers thereof, of all the receipts and expenditures, and the same shall be always open to the inspection of the United States Centennial Commission, or any member thereof.

SEC. 3. That books of subscription shall be opened by the United States Centennial Commission under such rules as it may prescribe, and an opportunity shall be given, during a period of one hundred days, to the citizens of each State and Territory, to subscribe for stock to an amount not exceeding its quota, according to its population, after which period of one hundred days stock not taken may be sold to any person or persons or corporation willing to purchase the same.

SEC. 4. That after the expiration of said period of one hundred days, the United States Centennial Commission shall issue a call for a meeting, by publication in one or more newspapers published at the capital of each State and Territory, not less than thirty days prior thereto, of the corporators and all others who may then have subscribed for stock, to be held in the city of Philadelphia, for the purpose of electing a board of directors, to consist of twenty-five stockholders, whose term of office shall be one year, and until their successors shall have been qualified; at which meeting those who may be present in person or by proxy, of whom one hundred shall constitute a quorum, shall be competent to organize and elect said officers. The said board of directors, and every subsequent board, shall be chosen by the stockholders, out of a list of one hundred stockholders, selected and nominated by the United States Centennial Commission. Nine members of the board of directors shall constitute a quorum for the transaction of business, but no election or change of officers shall take place unless at a meeting of the board of directors at which a majority shall be present.

SEC. 5. That the said board of directors shall elect, from its own number, a president and two vice-presidents, whose term of office shall be one year, and until their successors shall have been duly qualified, and shall appoint a treasurer, a secretary, and such other officers as may be required to carry out the purposes of the corporation, which elected and appointed officers shall hold their respective offices during the pleasure of the board, receiving such compensation as the board may prescribe; and the board shall also adopt such by-laws, rules, and regulations, for its own government and for the government of its offi-



cers, as may be deemed expedient: *Provided*, That the same shall not be inconsistent with any act of Congress or the rules adopted by the United States Centennial Commission.

SEC. 6. That as soon as the board of directors shall have been duly organized, as provided for in section five of this act, it shall be the duty of the United States Centennial Commission to deliver to the said board all stock-subscription books, with the papers and records of any kind in its possession, pertaining to the same.

SEC. 7. That the grounds for the exhibition shall be prepared and the buildings erected by the said corporation in accordance with plans which shall have been previously adopted by the United States Centennial Commission, and the rules and regulations of said corporation, governing rates for "entrance" and "admission" fees, or otherwise affecting the rights, privileges, or interests of the exhibitors, or of the public, shall be fixed and established by the United States Centennial Commission; and no grant conferring rights or privileges of any description connected with the said grounds or buildings, or relating to said exhibition or celebration, shall be made without the consent of the United States Centennial Commission, and said commission shall have power to control, change, or revoke all such grants, and shall appoint all judges and examiners, and award all premiums.

SEC. 8. That the Centennial Board of Finance shall have authority to issue bonds, not in excess of its capital stock, and secure the payment of the same, principal and interest, by mortgage upon its property and prospective income.

SEC. 9. That it shall be the duty of the Secretary of the Treasury of the United States, as soon as practicable after the passage of this act, to cause to be prepared, in accordance with a design approved by the United States Centennial Commission and the Secretary of the Treasury, a sufficient number of certificates of stock to meet the requirements of this act; and any person found guilty of counterfeiting, or attempting to counterfeit, or knowingly circulating false certificates of stock herein authorized, shall be subject to the same pains and penalties as are or may be provided by law for counterfeiting United States currency; but nothing in this act shall be so construed as to create any liability of the United States, direct or indirect, for any debt or obligation incurred, nor for any claim, by the centennial international exhibition, or the corporation hereby created, for aid of pecuniary assistance from Congress or the Treasury of the United States, in support or liquidation of any debts or obligations created by the corporation herein authorized: *And provided*, That nothing in this act shall be so construed as to override or interfere with the laws of any State; and all contracts made in any State for the purposes of the centennial international exhibition shall be subject to the laws thereof: *And provided further*, That no member of said Centennial Board of Finance assumes any personal liability for any debt or obligation which may be created or incurred by the corporation authorized by this act.

SEC. 10. That as soon as practicable after the said exhibition shall have been closed, it shall be the duty of said corporation to convert its property into cash, and, after the payment of all its liabilities, to divide its remaining assets among its stockholders, pro rata, in full satisfaction and discharge of its capital stock. And it shall be the duty of the United States Centennial Commission to supervise the closing up of the affairs of said corporation, to audit its accounts, and submit, in a report to the President of the United States, the financial results of the centennial exhibition.



SEC. 11. That the commission created by the act referred to in the preamble of this act is hereby made and constituted a body politic and corporate in law, with power to do such acts, and enter into such obligations, as may be promotive of the purposes for which such commission was established. Its title shall be the United States Centennial Commission. It shall have a common and corporate seal, and possess all the rights incident to corporate existence.

SEC. 12. That the alternate commissioners appointed pursuant to section four of the act approved March third, eighteen hundred and seventy-one, referred to in the preamble to this act, shall have all the powers of a commissioner when the commissioner is not present at any meeting. When the commissioner is present the alternate may participate in the debates and serve on committees, but shall have no vote. The appointment of all commissioners and alternate commissioners made since March third, eighteen hundred and seventy-two, is hereby ratified and confirmed; and all vacancies now existing, or which may hereafter exist, whether by death, resignation, removal from the State or Territory, or otherwise, shall be filled, at any time hereafter, in like manner as is provided in said act of March third, eighteen hundred and seventy-one, for the appointment of commissioners.

SEC. 13. That it shall be the duty of the United States Centennial Commission to make report, from time to time, to the President of the United States, of the progress of the work, and in a final report present a full exhibit of the result of the United States centennial celebration and exhibition of eighteen hundred and seventy-six.

Approved, June 1, 1872.

---

## 1776—INTERNATIONAL EXHIBITION, PHILADELPHIA—1876.

### SYSTEM OF CLASSIFICATION.

*Subject to revision.*

The classification embraces ten departments:

- I. RAW MATERIALS—MINERAL, VEGETABLE, AND ANIMAL.
- II. MATERIALS AND MANUFACTURES USED FOR FOOD OR IN THE ARTS, THE RESULT OF EXTRACTIVE OF COMBINING PROCESSES.
- III. TEXTILE AND FELTED FABRICS; APPAREL, COSTUMES, AND ORNAMENTS FOR THE PERSON.
- IV. FURNITURE AND MANUFACTURES OF GENERAL USE IN CONSTRUCTION AND IN DWELLINGS.
- V. TOOLS, IMPLEMENTS, MACHINES, AND PROCESSES.
- VI. MOTORS AND TRANSPORTATION.
- VII. APPARATUS AND METHODS FOR THE INCREASE AND DIFFUSION OF KNOWLEDGE.
- VIII. ENGINEERING, PUBLIC WORKS, ARCHITECTURE, &C.
- IX. PLASTIC AND GRAPHIC ARTS.
- X. OBJECTS ILLUSTRATING EFFORTS FOR THE IMPROVEMENT OF THE PHYSICAL, INTELLECTUAL, AND MORAL CONDITION OF MAN.

Each department will be divided into ten groups and one hundred

classes, to facilitate the arrangement and display of the various articles placed on exhibition. The following table will serve as a

### KEY TO THE GROUPS AND CLASSES.

Dep'ts.	Groups.	Classes.
I.	10— 19	100— 199
II.	20— 29	200— 299
III.	30— 39	300— 399
IV.	40— 49	400— 499
V.	50— 59	500— 599
VI.	60— 69	600— 699
VII.	70— 79	700— 799
VIII.	80— 89	800— 899
IX.	90— 99	900— 999
X.	100—109	1000—1099

### DEPARTMENT I.

#### RAW MATERIALS—MINERAL, VEGETABLE, AND ANIMAL.

#### GROUP 10.

#### MINERALS, ORES, BUILDING-STONES, METALS, AND METALLURGICAL PRODUCTS.

CLASS 100.—METALLIC AND NON-METALLIC MINERALS, EXCLUSIVE OF COAL AND OIL; collections of minerals systematically arranged; collections of ores and associated minerals; geological collections, aërolites.

CLASS 101.—METALLURGICAL PRODUCTS.—Iron and steel, copper, lead, zinc, antimony, and other metals, the result of extractive processes, with specimens of slags, fluxes, residues, and products of metallurgical processes.

CLASS 102.—MINERAL COMBUSTIBLES, such as coal, mineral tar, and petroleum.

[This class will include anthracite, semi-bituminous, and bituminous coals; cannel coal, jet, brown coal, and lignite; specimens of coal-waste, and of pressed coal; albertite, asphalt, and asphaltic limestones; bitumen of India, Trinidad, Mexico, California and other localities; crude mineral-tar, petroleum in its crude state as taken from the oil-springs or wells.]

CLASS 103.—BUILDING-STONES, MARBLES, SLATES, &c.—Specimens in the rough and hewn, sawed or polished, of granite, syenite, porphyry, sandstone, limestone, marble, alabaster, serpentine, or other rocks, used either for foundation or superstructure of buildings, bridges, walls or other constructions, or for interior decoration in floors, columns, wainscoting, &c., or for furniture.

Specimens of marble of all colors and grades—white, black, or col-



ored—used either in building, for decoration, for statuary, monuments, or for furniture, in blocks or slabs not manufactured.

Slates in masses, slabs, and split into the various sizes used for roofing.

[For tiles, marble and slate mantels, &c., see Departments II and IV.]

CLASS 104.—CLAYS, KAOLIN, SILEX, and other materials for the manufacture of porcelain, faience, and of glass, bricks, terra-cotta, and tiles and fire-brick. Refractory-stones for lining furnaces, sandstone, steatite, &c., and refractory furnace materials.

CLASS 105.—LIME, CEMENT, AND HYDRAULIC CEMENT of all grades, raw and burned, accompanied by specimens of the crude rock or materials used.

CLASS 106.—LITHOGRAPHIC STONES, HONES, WHETSTONES, GRIND-STONES, GRINDING AND POLISHING MATERIALS, such as sand, quartz, garnets, crude topaz, diamond, corundum, emery in the rock or pulverized, and in assorted sizes and grades, as sold for abrading purposes.

CLASS 107.—MINERAL WATERS, ARTESIAN-WELL WATERS, natural brines, saline and alkaline efflorescences and solutions.

CLASS 108.—MINERAL FERTILIZING SUBSTANCES, such as gypsum, phosphate of lime, marls, shells, coprolites, &c.—not manufactured.

CLASS 109.

## GROUP 11.

### AGRICULTURAL PRODUCTS USED CHIEFLY FOR FOOD.

CLASS 110.—CEREALS AND GRASSES, including straw, hay, corn, and various kinds of fodder.

CLASS 111.—ROOT CROPS.—Potatoes, turnips, beets, carrots, parsnips, onions, &c.

CLASS 112.—GREEN VEGETABLES.—Cabbages, cauliflowers, kale, beans, peas, squashes, egg-plants, cucumbers, tomatoes, melons, pumpkins.

CLASS 113.—FRUITS OF TEMPERATE AND SUBTROPICAL REGIONS.—Apples, pears, quinces, peaches, nectarines, apricots, plums.

CLASS 114.—TROPICAL FRUITS.—Oranges, bananas, plantains, lemons, pine-apples, pomegranates, figs, cocoa-nuts.

CLASS 115.—GRAPES AND GRAPE CULTURE.—[This class will include all varieties of the grape under cultivation, whether raised under glass or not, though the locality and method of raising will in all cases be stated with the specimens sent. It is desirable to have a very full representation of the various kinds now raised in such perfection in the open air in California, such as the Black Hamburg, Flaming Tokay, Muscat, &c.]

CLASS 116.—SMALL FRUITS, BERRIES, &c.—Strawberries, raspberries, blackberries, blueberries, whortleberries, cherries, &c.

CLASS 117.—DRIED FRUITS OF ALL KINDS.—Raisins, figs, prunes, plums, prunellas, dates, apples, pears, peaches, cherries, &c.

CLASS 118.—DRIED VEGETABLES AND SEEDS, EXCLUSIVE OF CEREALS, INCLUDING GARDEN AND FLOWER SEEDS.—Peas, beans, pulse, &c.

CLASS 119.—NUTS.—Cocoa-nuts, ivory nuts, and the various tropical and other nuts and seeds used for food or in the arts.

## GROUP 12.

## ARBORICULTURE AND FLORICULTURE.

CLASS 120.—FRUIT TREES, and methods of rearing and transplanting.

CLASS 121.—ORNAMENTAL TREES AND SHRUBS, and methods of rearing and transplanting.

CLASS 122.—ANNUAL AND PERENNIAL FLOWERING PLANTS, grown in the open air, to be exhibited in successive periods according to the season.

CLASS 123.—HOT-HOUSE AND CONSERVATORY PLANTS, and management of them; hot-beds, forcing and propagating houses.

CLASS 124.—FRUIT TREES, under glass.

CLASS 125.—ORCHIDS AND PARASITIC PLANTS, and their management or treatment.

CLASS 126.—FERNS, and the best method of growing them under glass in hot-houses, or in cases, or in the open air; ferneries.

CLASS 127.—CACTACEA.

CLASS 128.—AQUATIC PLANTS.

CLASS 129.—GROWING CROPS.—Grasses, cereals, tubers, roots, kitchen-garden vegetables, and methods of growing.

## GROUP 13.

## FOREST PRODUCTS.

CLASS 130.—LOGS AND SECTIONS OF TREES, samples of wood and timber of all kinds generally used in construction or manufactures, either in the rough or hewed, sawed or split, including square timber, joists, scantling, plank, and boards of all sizes and kinds commonly sold for building purposes. Also ship-timber, as used in ship-building, or for masts and spars; piles; timber for fencing, for posts, or for timbering shafts of mines. Miscellaneous collections of wood illustrative of the various kinds and the purposes to which they are applied.

CLASS 131.—WORKED TIMBER OR LUMBER, in form of clapboards, shingles, sheathing or flooring-casings, moldings, and stair-rails.

CLASS 132.—ORNAMENTAL WOOD, used in decorating and for furniture; veneers of hard and fancy woods; mahogany logs, crotches and veneers; rosewood, satin-wood, ebony, bird's-eye maple, madrona, black-walnut veneers, and other fancy woods, suitable for and used for ornamental purposes.

CLASS 133.—TIMBER PREPARED IN VARIOUS WAYS TO RESIST DECAY; kyanized timber.

CLASS 134.—DYEING, TANNING AND COLORING.—Dyewoods, barks, and various vegetable substances in their raw state, used for dyeing and coloring.

a. Logwood, Brazil-wood, peach-wood, fustic, sumac.

b. Barks of various kinds, Brazilian, acacias, oak, hemlock, murici, bicida, gordonia.

c. Galls, excrescences, and abnormal woody products.

d. Mosses used for dyeing and coloring.

CLASS 135.—CELLULAR SUBSTANCES.—Corks, and substitutes for corks, of vegetable growth; porous woods for special uses; pith, rice, paper, &c.

CLASS 136.—LICHENS, MOSSES, PULU, FERNS, and vegetable sub-



stances used for bedding, for upholstery, or for mechanical purposes, as teazels, Dutch rushes, scouring grass, &c.

CLASS 137.—GUMS, RESINS, VEGETABLE WAX OR TALLOW WAX, HONEY, including caoutchouc, senegal, tragacanth, Arabic, myrrh, copal, &c.

CLASS 138.—SEEDS AND FRUITS, for ornamental purposes; vegetable ivory, coquilla nuts, cocoa-nut shells, ganitrus beads, bottle gourds, &c.

CLASS 139.—MISCELLANEOUS PRODUCTS.

#### GROUP 14.

AROMATIC, OLEAGINOUS, SAPONACEOUS, STIMULATING, AND NARCOTIC SUBSTANCES OF VEGETABLE GROWTH. VEGETABLE DRUGS AND PERFUMES.

CLASS 140.—TOBACCO OF ALL VARIETIES, and in its various stages of growth and curing, in the leaf and crude or manufactured.

CLASS 141.—SEEDS FROM WHICH OIL IS EXPRESSED.—Cotton seed, mustard seed, rape seed, linseed, sun-flower seed, olives, palm-nuts, castor beans, oil-cake, and residues of the oil manufacture.

CLASS 142.—SPICES AND CONDIMENTS.—Pepper, cinnamon, mace, nutmegs, cloves, capsicum, vanilla, pimento, cardamons, ginger, mustard.

CLASS 143.—TEA AND THE VARIOUS SUBSTITUTES FOR TEA USED IN DIFFERENT COUNTRIES.—Of teas, all varieties, and in the various stages of preparation for the market, and in the various styles and modes of packing.

CLASS 144.—COFFEE, CHOCOLATE, COCOA, CHICCORY, AND THE VARIOUS SUBSTITUTES FOR COFFEE.

CLASS 145.—PLANTS, FLOWERS, ROOTS, LEAVES, AND HERBS, USED IN BEER-MAKING AND IN PHARMACY.—Hops, sarsaparilla, winter-green, spruce leaves, cinchona, cascarilla, cusparia, and other barks.

CLASS 146.—SAPONACEOUS PLANTS, LEAVES, ROOTS, SEEDS, BARKS, &c.

CLASS 147.—VEGETABLE DRUGS AND PERFUMES.

CLASS 148.

CLASS 149.

#### GROUP 15.

FIBROUS SUBSTANCES OF VEGETABLE OR OF ANIMAL ORIGIN USED IN THE ARTS.

CLASS 150.—COTTON IN THE BOLL, and cleansed from seeds, as ready for the market, and of all grades and varieties—uplands, low middling, sea island, Chinese, Indian, &c.

CLASS 151.—FLAX, HEMP, JUTE, RAMIE, &c., in their various stages of preparation, and all similar fibers, such as the *cabouya*, of Santo Domingo; from plants of the aloe family, pine-apple fiber, China grass, nettle fiber, plantain; substitutes for hemp.

CLASS 152.—COIR OR COCOA-NUT FIBER, and other similar substances.

CLASS 153.—WOOL IN THE FLEECE, in bales, or carded.

CLASS 154.—SILK IN COCOONS AND REELED.

CLASS 155.—HAIR FOR TEXTILE PURPOSES, for cordage, for plastering, bedding, upholstering, &c.; for making hair-cloth for covering furniture, for sieves, &c.; for making wigs, curls, fronts, switches, &c.

[For manufactured hair-work used as clothing or adornment, see Department III.]

## GROUP 16.

## ANIMALS, LIVE STOCK, ETC.

CLASS 160.—HORSES, ASSES, MULES.

CLASS 161.—BULLS, COWS, OXEN, SHEEP.

CLASS 162.—GOATS, ANGORA GOATS, ALPACA, LLAMA, CAMEL.

CLASS 163.—SWINE, AND METHODS OF REARING, FEEDING, &c.

CLASS 164.—DOGS FOR HUNTING, WATCH-DOGS, COACH-DOGS, AND ALL OTHER VARIETIES.

CLASS 165.—WILD ANIMALS.—Living wild animals from various countries; elk, deer, antelope, buffalo, bears, wolves, wild-cats, and other animals, from the Western States and Territories; stuffed skins.

CLASS 166.—POULTRY AND DOMESTIC FOWL OF ALL KINDS, WITH SPECIMENS OF THEIR CAGES, POULTRY-YARDS, &c.

CLASS 167.—CAGE-BIRDS, AVIARIES, &c.

CLASS 168.—REPTILES AND BATRACHIANS.—Turtles, terrapins, frogs, &c.

CLASS 169.—INSECTS.—Honey-bees, silk-worms and silk-worm eggs, silk-spiders; insects injurious to vegetation or otherwise.

## GROUP 17.

## FISH AND AQUATIC LIFE AND FISH PRODUCTS.

CLASS 170.—MARINE MAMMALS.—Seals, cetaceans, &c.; specimens living in aquaria, or stuffed, salted, preserved in alcohol or otherwise.

CLASS 171.—FISHES, LIVING OR PRESERVED.

CLASS 172.—PICKLED FISH, AND PARTS OF FISH USED FOR FOOD.

CLASS 173.—FISH, OR PARTS OF FISH, caviar, sharks' fins, salted, smoked, dried, or otherwise preserved for food.

CLASS 174.—CRUSTACEANS, ECHINODERMS, BECHE DE MER.

CLASS 175.—MOLLUSKS.—Oysters, clams, &c., used for food.

CLASS 176.—FISH OR FISH-PRODUCTS used in agriculture or manufactures. Fish-glue, isinglass, sounds, fish-oil, &c. [See also class 184 and 220.]

CLASS 177.—SPONGES, SEA-WEED, AND OTHER MARINE GROWTHS USED FOR FOOD OR IN THE ARTS.—Algæ, kelp, &c.; sponges, sea-fans, gorgonia, &c.

CLASS 178.—SHELLS, CORAL, PEARLS, &c.—Mother-of-pearl, haliotis, unio, and other shells of iridescent pearly luster; conch shells, finely colored, used for cameos and for other purposes; collections of shells systematically arranged, characteristic of each country. Coral of all qualities and shades of color, in its crude state, and as sold in commerce. Pearls of all sizes, colors, and forms, as found—not mounted.

CLASS 179.—WHALEBONE, SHAGREEN, &c.

## GROUP 18.

## ANIMAL PRODUCTS USED AS FOOD OR AS THE BASIS OF MANUFACTURES, EXCLUSIVE OF AQUATIC PRODUCTS.

CLASS 180.—THE DAIRY.—MILK, EGGS, CREAM, BUTTER, CHEESE, &c.; lard, tallow, fats of all kinds. [For spermaceti, &c., see class 222.]



## CLASS 181.—SKINS, PELTRIES, FURS AND FEATHERS.

*a. Skins and Furs.*—Buffalo, bear, beaver, wolf, fox, muskrat, otter, seal, mink, ermine, sable and marten, hare and rabbit, lamb, sheep, goat, squirrel, chinchilla, and cat skins, and mats. Skins from the tropics, of the lion, tiger, leopard, panther, zebra, antelope, &c. Skins of the deer, elk, or horse, tanned or dried with the hair on.

*b. Feathers.*—Of the goose, eider duck, or other fowl, used for bedding; for ornament, as the ostrich, marabout, rhea or vulture, osprey, emu, birds of paradise, heron, ibis, swan, turkey-cock, peacock, pheasant (common, copper, or golden,) eagle and other plumes. Also skins of birds used for clothing.

CLASS 182.—LEATHER, PARCHMENT, AND VELLUM, of the various kinds and styles of finish. Oak-tanned leather, hemlock-tanned, dyed leather, enameled or “patent-leather,” curried leather, calf, kip, and seal skin, morocco for shoes, book-binding, and pocket-books; for covering furniture, &c. Harness and saddlery leather; pigskin; Russia leather, sheepskin, buckskin, chamois. Parchment for commissions, patents, deeds, diplomas, &c. Vellum for similar purposes, and for books and book-binding; for drums and tamborines, for gold-beaters’ use, &c.

CLASS 183.—IVORY, BONE, HORN, WALRUS TEETH, TORTOISE SHELL.

CLASS 184.—GLUE, GELATINE, ISINGLASS, BLOOD AND ITS PREPARATIONS. [See also class 176.]

CLASS 185.—ANIMAL PERFUMES.—Musk, castoreum, civet, ambergris, &c., in their crude state, not manufactured. [For animal oils, &c., see class 220.]

## GROUP 19.

## PRESERVED MEATS, VEGETABLES AND FRUITS.

CLASS 190.—SALTED OR PICKLED MEATS.—Salt beef, pork.

CLASS 191.—DRIED AND SMOKED MEAT.—Dried beef and jerked beef as prepared in Mexico, California, and dry countries, smoked and dried beef, and pork, hams, bacon, sausages, Bologna sausages, &c.

CLASS 192.—CANNED MEATS, MILK, including fish, flesh and fowl, patès, sardines, &c. (Lobster, oysters.)

CLASS 193.—VEGETABLES, desiccated, or in cans or glass hermetically sealed, tomatoes, corn, asparagus, &c.

CLASS 194.—PICKLES, CHAMPIGNONS, TRUFFLES.

CLASS 195.—FRUITS IN CANS OR IN GLASS, preserved in sirup or alcohol.

CLASS 196.—JELLIES, JAMS, MARMALADES.

## DEPARTMENT II.

MATERIALS AND MANUFACTURES USED FOR FOOD, OR IN THE ARTS,  
THE RESULT OF EXTRACTIVE OR COMBINING PROCESSES.

## GROUP 20.

EXTRACTS AND COMPOUNDS OF ANIMAL OR VEGETABLE ORIGIN, USED  
CHIEFLY FOR FOOD.

CLASS 200.—STARCH AND ITS MANUFACTURE.—Starch from all sources, from grain, potatoes, or other tubers, arrow-root, plantain meal,

cassava meal, zamia starch of Santo Domingo, and of Australia; manioca, tous-les-mois, tapioca, sago, and pearl flour.

CLASS 201.—SUGAR, MOLASSES, AND SIRUPS.—Molasses and sirups from all sources, from the sugar-cane, sorghum, the maple or palm, from beets or fruit; and sugar in its various forms and stages of preparation, from the brown crude sugars to the crystallized white loaf.

CLASS 202.—CONFECTIONERY.

CLASS 203.—ALCOHOL AND SPIRITUOUS LIQUORS.—Wine, cider, brandy, rum, whisky, gin, pisko, saki, samshoo.

*a.* Ordinary red and white wines, sweet and mulled wines, sauterne, claret, hock, catawba, sparkling wines, cider, perry, and other fermented drinks made from the juice of fruit. Fermented drinks drawn from vegetable saps, milk, or saccharine substances of any kind.

*b.* *Distilled liquors.*—Rum, brandy, whisky, gin, pisko, proof-spirit.

*c.* *Cordials.*—Absinthe, Curaçoa, kirschwasser, &c.

CLASS 204.—MALT LIQUORS, SMALL BEER, AND SODA-WATER.—Beer, ale, porter or stout, lager-beer, root-beer, ginger-beer, ginger-ale, soda-water with or without various sirups, bottled or in fountains.

CLASS 205.—BREAD, CAKE AND PASTRY.—The various forms and kinds of bread and rolls, cake and pastry, with or without yeast.

CLASS 206.—BISCUIT, CRACKERS, PASTES, &c.—Sea-biscuit or pilot-bread, water, milk and butter crackers, fancy crackers, Albert biscuit, ginger biscuit, Italian pastes, maccaroni, vermicelli, semouille; paste in fancy forms for soups.

CLASS 207.—COMPOUND PORTABLE FOOD, MEAT AND VEGETABLE EXTRACTS.

*a.* Prepared army rations.

*b.* Extract of beef.

*c.* Extract of coffee.

CLASS 208.

CLASS 209.

## GROUP 21.

POTASH, SODA AND AMMONIA; SALT, BLEACHING-POWDERS, FERTILIZING COMPOUNDS, MINERAL ACIDS.

CLASS 210.—MINERAL ACIDS, AND THE METHODS OF MANUFACTURE.—Sulphuric, nitric and hydrochloric acids.

CLASS 211.—THE COMMON COMMERCIAL ALKALIES, POTASH, SODA AND AMMONIA, WITH THEIR CARBONATES.

CLASS 212.—SALT AND ITS PRODUCTION.—Salt from deposits—native salt. Salt by solar evaporation from sea-water. Salt by evaporation from water of saline springs or wells. Rock salt, ground and table salt.

CLASS 213.—BLEACHING POWDERS AND CHLORIDE OF LIME.

CLASS 214.—FERTILIZING COMPOUNDS MADE FROM BONES, GUANO, FISH, AND OTHER ORGANIC SOURCES.

CLASS 215.—FERTILIZING COMPOUNDS MADE FROM MINERAL PHOSPHATES, POTASH SALTS, AND OTHER MINERAL SOURCES. STASSFURTH COMPOUNDS.

CLASS 216.

CLASS 217.

CLASS 218.

CLASS 219.



## GROUP 22.

OILS, SOAP, CANDLES, ILLUMINATING AND OTHER GASES.

CLASS 220.—OILS FROM MINERAL, ANIMAL AND VEGETABLE SOURCES.

*a.* Refined petroleum, benzine, naphtha, and other products of the manufacture.*b.* Oils from various seeds, crude and refined, and of various degrees of purity. Olive-oil, cotton-seed oil, palm-oil.*c.* Animal oils, of various kinds, in their refined state.*d.* Oils prepared for special purposes besides lighting and for food. Lubricating oils.

CLASS 221.—SOAPS AND DETERGENT PREPARATIONS.

CLASS 222.—CANDLES, STEARINE, PARAFFINE, &amp;C., SPERMACETI.

CLASS 223.—GLYCERINE.

CLASS 224.—ILLUMINATING GAS, AND ITS MANUFACTURE.

CLASS 225.—OXYGEN GAS, and its application for heating, lighting, metallurgy, and as a remedial agent.

CLASS 226.—CHLORINE AND CARBONIC ACID.

## GROUP 23.

CHEMICAL AND PHARMACEUTICAL PREPARATIONS.

## GROUP 24.

PAINTS, PIGMENTS, DYES, COLORS, TURPENTINES, OILS, VARNISHES, PRINTING-INKS, WRITING-INKS, BLACKING.

## GROUP 25.

PATENT MEDICINAL COMPOUNDS, PERFUMERY, ESSENCES, POMADES, COSMETICS, AROMATIC VINEGARS, ETC.

## GROUP 26.

CEMENTS, ARTIFICIAL STONE, CONCRETE, BÉTON.

CLASS 260.—SPECIMENS OF LIME MORTAR AND MIXTURES, showing their hardness, strength, durability, &amp;c., with illustrations of the processes of mixing, &amp;c.

CLASS 261.—HYDRAULIC AND OTHER CEMENTS, as used, showing their strength and durability.

CLASS 262.—BÉTON MIXTURES AND RESULTS. Coignet's béton and examples, with illustrations of the processes.

CLASS 263.—ARTIFICIAL STONE for building purposes, building blocks, cornices, &amp;c. (such, for example, as Ransome's, the Frear, &amp;c.)

CLASS 264.—ARTIFICIAL STONE MIXTURES for pavements, walls, or ceilings.

CLASS 265.—PLASTERS, MASTICS, &amp;C.

## GROUP 27.

THE CERAMIC ART—TERRA COTTA, FAIENCE, PORCELAIN AND GLASS.

CLASS 270.—BRICKS, TERRA COTTA, and architectural pottery, &amp;c.

CLASS 271.—FIRE-CLAY GOODS, CRUCIBLES, pots, furnaces, &amp;c. Chemical stone-ware.

CLASS 272.—TILES.—Plain, enameled, encaustic and geometric tiles and mosaics. Tiles for pavements and for roofing, &c.

CLASS 273.—FAIENCE MAJOLICA, earthenware and household pottery.

CLASS 274.—PORCELAIN, for purposes of construction and ornament.

CLASS 275.—PORCELAIN-WARE, for table and household use.

CLASS 276.—GLASS used in construction and for mirrors.

*a.* Window-glass of various grades of quality and of size.

*b.* Plate-glass, hammered, and ground or polished.

CLASS 277.—CHEMICAL GLASS-WARE, bottles, &c.

CLASS 278.—TABLE AND DECORATIVE GLASS-WARE.

CLASS 279.

#### GROUP 28.

EXPLOSIVE AND FULMINATING COMPOUNDS. [*In small quantities only, under special regulations, or shown by empty cases and cartridges.*]

CLASS 280.—BLACK POWDER of various grades and sizes.

CLASS 281.—NITRO-GLYCERINE and the methods of using and exploding.

CLASS 282.—GIANT POWDER, dynamite, dualin, &c.

#### GROUP 29.

### DEPARTMENT III.

TEXTILE AND FELTED FABRICS, APPAREL, COSTUMES, AND ORNAMENTS FOR THE PERSON.

#### GROUP 30.

YARNS AND WOVEN GOODS OF VEGETABLE OR MINERAL MATERIALS.

CLASS 300.—WOVEN FABRICS OF MINERAL ORIGIN.

*a.* Wire cloths, sieve-cloth, wire screens, bolting-cloth, &c., not manufactured.

*b.* Asbestos fiber, spun and woven, with the clothing manufactured from it.

*c.* Glass thread, floss, and fabrics.

CLASS 301.—COARSE FABRICS, of grass, rattan, cocoa-nut, bark, and aloe fiber.

*a.* Mattings of all kinds, Chinese, Japanese, palm-leaf, grass, and rushes.

*b.* Floor-cloths of rattan and cocoa-nut fiber.

CLASS 302.—COTTON YARNS AND FABRICS, bleached and unbleached, but not colored.

*a.* Cotton sheeting and shirting, plain and twilled.

*b.* Cotton canvas and duck.

CLASS 303.—DYED COTTON FABRICS, exclusive of prints and calicoes.

CLASS 304.—COTTON PRINTS AND CALICOES, including handkerchiefs, shawls, scarfs, &c.

CLASS 305.—LINEN AND FINE GRASS FABRICS, UNCOLORED.

CLASS 306.—DYED LINEN FABRICS.

CLASS 307.

CLASS 308.

CLASS 309.—FLOOR OIL-CLOTHS, and other painted and enameled tissues, and imitations of leather, with a woven base.



GROUP 31.

WOVEN AND FELTED GOODS OF WOOL AND MIXTURES OF WOOL.

CLASS 310.—CARD-WOOL FABRICS.—Yarns, broadcloths, doeskins, fancy cassimeres.

CLASS 311.—FLANNELS.—Plain flannels, domets, opera and fancy.

CLASS 312.—BLANKETS, ROBES AND SHAWLS.

CLASS 313.—COMBED-WOOL FABRICS.—Worsted, yarns, dress-goods for women's wear; delaines, serges, poplins, merinoes.

CLASS 314.—CARPETS, RUGS, &c.—Brussels, Melton, tapestry, tapestry Brussels, Axminster, Venetian, ingrain, felted carpetings, druggets, rugs, &c.

CLASS 315.—HAIR, ALPACA, GOAT'S HAIR, CAMEL'S HAIR, and other fabrics, mixed or unmixed with wool.

CLASS 316.—PRINTED AND EMBOSSED WOOLEN CLOTHS, TABLE COVERS, PATENT VELVETS.

CLASS 317.

CLASS 318.

CLASS 319.

GROUP 32.

SILK AND SILK FABRICS AND MIXTURES IN WHICH SILK IS THE PRE-DOMINATING MATERIAL.

GROUP 33.

KNIT GOODS AND HOSIERY, INCLUDING UNDERWEAR MADE OF PIECE GOODS.

GROUP 34.

CLOTHING, READY-MADE CLOTHING, MILITARY CLOTHING, COSTUMES AND CLOTHING FOR SPECIAL OBJECTS.

GROUP 35.

HATS, CAPS, BOOTS AND SHOES, GLOVES, MITTENS, ETC., STRAW AND PALM-LEAF HATS, BONNETS, AND MILLINERY.

GROUP 36.

LACES, EMBROIDERIES, AND TRIMMINGS FOR CLOTHING, FURNITURE, AND CARRIAGES.

GROUP 37.

FINE JEWELRY, AND METALLIC OR MINERAL ORNAMENTS WORN UPON THE PERSON.

GROUP 38.

ORNAMENTS, ARTIFICIAL FLOWERS, COIFFURES, BUTTONS, TRIMMINGS, FANS, UMBRELLAS, SUN-SHADES, WALKING-CANES, AND OTHER OBJECTS OF DRESS OR ADORNMENT, EXCLUSIVE OF JEWELRY.

GROUP 39.

PAPER, PASTEBOARD, CARD-BOARD, WALL-PAPERS, PAPER BUILDING-MATERIAL AND FOR GENERAL CONSTRUCTION, AND PAPER INDUSTRY GENERALLY.

CLASS .—Blank-books and stationery.

[See also Groups 70 and 71.]

## DEPARTMENT IV.

FURNITURE AND MANUFACTURES OF GENERAL USE IN CONSTRUCTION  
AND IN DWELLINGS.

[See also Group 98.]

## GROUP 40.

FURNITURE.—Chairs, tables, parlor and chamber suits, office and library furniture.

CLASS —.—Safes.

## GROUP 41.

TABLE-FURNITURE.—Glass, china, silver, silver-plate, tea and coffee sets, urns, samovars, epergnes.

## GROUP 42.

MIRRORS, STAINED AND ENAMELED GLASS, CUT AND ENGRAVED WINDOW-GLASS, AND OTHER DECORATIVE OBJECTS.

## GROUP 43.

APPARATUS AND FIXTURES FOR HEATING, LIGHTING, VENTILATING AND COOKING.

## GROUP 44.

HOUSEHOLD IMPLEMENTS, APPARATUS, AND ARTICLES USED IN DWELLINGS.

CLASS —.—Laundry appliances, washing-machines, mangles, clothes-wringers, clothes-bars, clothes-lines, &amp;c.

CLASS —.—Nursery.

CLASS —.—Kitchen and pantry.

CLASS —.—Cellar.

CLASS —.—Bath-room and water-closet.

CLASS —.—Library.

CLASS —.—Vestibule and hall furniture, rubber and cocoa mattings, shoe-cleaners, umbrella-stands, &amp;c.

CLASS —.—Lawn furniture, camp-stools, rustic-work, tents, awnings, hammocks, lunch-baskets, &amp;c.

## GROUP 48.

## MANUFACTURED PARTS OF DWELLINGS.

CLASS —.—Windows, sash and blinds, doors.

## GROUP 49.

HARDWARE USED IN CONSTRUCTION, EXCLUSIVE OF TOOLS AND IMPLEMENTS.—Spikes, nails, screws, tacks, bolts; locks, latches, bolts, hinges, pulleys; plumbers' and gas-fitters' hardware; furniture-fittings; ships' hardware and fittings.



## DEPARTMENT V.

## TOOLS, IMPLEMENTS, MACHINES AND PROCESSES.

## GROUP 50.

MACHINES, TOOLS AND APPARATUS OF MINING, METALLURGY, CHEMISTRY, AND THE EXTRACTIVE ARTS.

## GROUP 51.

MACHINES, TOOLS AND APPARATUS OF AGRICULTURE, AND FORESTRY AND ALIMENTARY INDUSTRY.

## GROUP 52.

MACHINES, TOOLS AND APPLIANCES FOR WORKING WOOD, METALS OR STONE.

CLASS —.—EMERY-PAPER, SAND-PAPER.

## GROUP 53.

MACHINES AND IMPLEMENTS OF SPINNING, WEAVING, FELTING, PAPER-MAKING, SEWING, AND MAKING CLOTHING AND ORNAMENTAL OBJECTS.

## GROUP 54.

MACHINES AND APPARATUS FOR TYPE-MAKING, TYPE-SETTING, PRINTING, RULING, STAMPING, EMBOSSING, PRESSING, AND FOR MAKING BOOKS AND PAPER-WORKING.

## CLASS 540.—PRINTING-PRESSES.

- a.* Hand-presses.
- b.* Steam-power presses.
- c.* Job-presses.
- d.* Hydraulic-presses.
- e.* Ticket-printing and numbering machines.

## CLASS 541.—TYPE-CASTING MACHINES.

- a.* Hand-casting moulds.
- b.* Matrices.
- c.* Printing-blocks.
- d.* Typographic electric typing.
- e.* Sterotyping.

## CLASS 542.—TYPES.

- a.* Plain and ornamental types.
- b.* Cuts, music, borders, electrotyped plates, &c.
- c.* Specimen books of alphabets and typographical ornaments.

## CLASS 543.—PRINTERS FURNITURE.

- a.* Cabinets.
- b.* Composing-sticks.
- c.* Cases.
- d.* Brass and type-metal labor-saving appliances.

## CLASS 544.—TYPE-SETTING MACHINES.

## CLASS 545.—BOOK-BINDING MACHINES.

## CLASS 546.—PAPER-FOLDING MACHINES.

## CLASS 547.—PAPER AND CARD CUTTING MACHINES.

## CLASS 548.—ENVELOPE-MACHINES.

## CLASS 549.—

## GROUP 55.

MISCELLANEOUS HAND-TOOLS, MACHINES AND APPLIANCES USED IN  
VARIOUS ARTS. CUTLERY.

CLASS —.—Watch-making.

## GROUP 56.

## GROUP 57.

## GROUP 58.

INSTRUMENTS AND APPARATUS OF MEDICINE AND SURGERY; OF  
RELIEF TO THE WOUNDED, SANITARY APPARATUS AND METHODS.

## GROUP 59.

INSTRUMENTS AND APPARATUS FOR THE DESTRUCTION OF LIFE; FOR  
HUNTING, TRAPPING, FISHING.

CLASS 590.—CUTTING INSTRUMENTS, KNIVES, SWORDS, SPEARS,  
DIRKS, &c.

CLASS 591.—FIRE-ARMS FOR SPORTING AND HUNTING.

CLASS 592.—MILITARY SMALL-ARMS, MUSKETS, PISTOLS, AND MAGA-  
ZINE-GUNS, WITH THEIR AMMUNITION.

CLASS 593.—LIGHT ARTILLERY, COMPOUND GUNS, MACHINE-GUNS,  
(MITRAILLEUSES,) &c.

CLASS 594.—HEAVY ORDNANCE AND ITS ACCESSORIES.

CLASS 595.—AMMUNITION, SHELLS, &c.

CLASS 596.

CLASS 597.

CLASS 598.—FISHING IMPLEMENTS.—Nets of all kinds, seines, lines,  
hooks, harpoons, spears, &c.; artificial baits, floats, sinkers, indicators,  
preserving substances for nets, tow; basket-fishing apparatus; imple-  
ments used in the artificial hatching of fish-eggs.

CLASS 599.—MODELS OF BASINS, beds, wattle fences, vases, boxes,  
and other apparatus used in fish breeding, culture, or preservation;  
models of fish-pens, wears, &c.

## DEPARTMENT VI.

## MOTORS AND TRANSPORTATION.

## GROUP 60.

MOTORS AND APPARATUS FOR THE GENERATION AND TRANSMISSION  
OF POWER, AND FOR LIFTING AND MOVING FLUIDS.

CLASS 600.—BOILERS AND ALL STEAM OR GAS GENERATING APPA-  
RATUS FOR MOTIVE PURPOSES.

CLASS 601.—WATER-WHEELS, WATER-ENGINES, HYDRAULIC RAMS,  
WIND-MILLS.

CLASS 602.—STEAM AND AIR OR GAS ENGINES.

CLASS 603.—ELECTRO-MAGNETIC MOTOR ENGINES.

CLASS 604.—APPARATUS FOR THE TRANSMISSION OF POWER.—  
Shafting, hangers, pulleys, couplings, gearing, friction-pulleys, clutches,



&c.; belting, cables. Transmission of power by compressed air; mahovos.\*

CLASS 605.—PUMPS AND APPARATUS FOR LIFTING AND MOVING LIQUIDS.

- a. Ordinary lift and forcing pumps worked by hand.
- b. Lift and plunger pumps for mining, draining, elevating, and forcing.
- c. Rotary pumps, centrifugal pumps.
- d. Steam-pumps.
- e. Fire-engines.
- f. Steam or air injectors.
- g. Ejectors or steam siphon pumps.
- h. Ejector condensers.

CLASS 606.—PUMPS AND APPARATUS FOR MOVING AND COMPRESSING AIR OR GASES.—Piston air-pumps, for exhausting or for compressing air, rotary air-pumps and blowers, ventilators, water stromels.

CLASS 607.—ICE-MACHINES.

CLASS 608.

CLASS 609.

#### GROUP 61.

VEHICLES AND APPARATUS OF TRANSPORTATION UPON COMMON ROADS,  
AND ACCESSORIES THERETO.

#### GROUP 62.

RAILWAYS AND RAILWAY PLANT.

#### GROUP 63.

RAILWAY ROLLING-STOCK AND APPARATUS.

#### GROUP 64.

HOOISTING AND LIFTING APPARATUS.

#### GROUP 65.

TRANSPORTATION UPON SUSPENDED CABLES—AERIAL TRANSPORTATION, PNEUMATIC TRANSPORTATION.

#### GROUP 66.

BOATS AND SAILING-VESSELS FOR GENERAL PURPOSES.

#### GROUP 67.

STEAMSHIPS, STEAMBOATS, PROPELLERS, AND ALL VESSELS PROPELLED BY STEAM, OR OTHER FIXED MOTORS.

[See also GROUP 69.]

#### GROUP 68.

---

\* Contrivances for accumulation of power by means of fly-wheels.

## GROUP 69.

## BOATS OR VESSELS DESIGNED FOR SPECIAL PURPOSES.

CLASS 690.—VESSELS FOR LAYING TELEGRAPH CABLES.

CLASS 691.—VESSELS FOR ARCTIC VOYAGES, FOR WHALING, &c.

CLASS 692.—LIFE-BOATS AND SALVAGE APPARATUS.

CLASS 693.—DREDGING-BOATS AND BOATS FOR THE CONVEYANCE OF SAND AND REFUSE.

CLASS 694.—FOR TRANSPORTATION OF COAL OR ORES, FOR ICE, FOR WATER, OR OTHER BULKY SUBSTANCES OR OBJECTS.

CLASS 695.—FOR THE CONVEYANCE OF RAILWAY TRAINS, FREIGHT-CARS, &c.

CLASS 696.—FERRY-BOATS.

CLASS 697.—REFRIGERATING VESSELS for transportation of fresh meats and fruits.

CLASS 698.—SHIPS OF WAR.

*a.* Wooden ships.

*b.* Iron-clad batteries (floating).

## DEPARTMENT VII.

## APPARATUS AND METHODS FOR THE INCREASE AND DIFFUSION OF KNOWLEDGE.

## GROUP 70.

## EDUCATIONAL APPARATUS AND METHODS.

CLASS 700.—OBJECTS FOR THE INSTRUCTION AND AMUSEMENT OF THE YOUNG.

CLASS 701.—SCHOOL FURNITURE AND FITTINGS.

CLASS 702.—SCHOOL APPARATUS, for experiment and illustration.

CLASS 703.—TABULAR GRAPHIC REPRESENTATIONS, wall maps, charts, &c.

CLASS 704.—MODELS, RELIEF-MAPS.

CLASS 705.—DRAWING-BOOKS, and instruments and systems of instruction in drawing.

CLASS 706.—WRITING-BOOKS, and systems of instruction in writing.

CLASS 707.—MODELS, CASTS AND CARVINGS, serving as objects for free-hand drawing.

CLASS 708.—COURSES AND METHODS OF EXAMINATION.

CLASS 709.—SCHOOL-DISCIPLINE AND MILITARY TRAINING IN SCHOOLS. Sanitary regulations of school-buildings.

## GROUP 71.

## TYPOGRAPHIC AIDS TO THE PRESERVATION AND DISSEMINATION OF KNOWLEDGE.

CLASS 710.—SCHOOL AND TEXT BOOKS.

CLASS 711.—DICTIONARIES, ENCYCLOPEDIAS, GAZETTEERS, DIRECTORIES, INDEX-VOLUMES, BIBLIOGRAPHIES, CATALOGUES, ALMANACS.

CLASS 712.—SPECIAL TREATISES.



- CLASS 713.—GENERAL AND MISCELLANEOUS LITERATURE.  
 CLASS 714.—NEWSPAPERS.  
 CLASS 715.—TECHNICAL AND SPECIAL NEWSPAPERS AND JOURNALS.  
 CLASS 716.—ILLUSTRATED PAPERS.  
 CLASS 717.—PERIODICAL LITERATURE.  
 CLASS 718.  
 CLASS 719.—WORKS OF IMAGINATION AND FANCY.

## GROUP 72.

## CHARTS, MAPS, AND GRAPHIC REPRESENTATIONS.

- CLASS 720.—TOPOGRAPHICAL MAPS.  
 CLASS 721.—MARINE AND COAST CHARTS, profiles of ocean-bed between specified points.  
 CLASS 722.—GEOLOGICAL MAPS AND SECTIONS.  
 CLASS 723.—BOTANICAL, AGRONOMICAL, AND OTHER MAPS, showing the extent and distribution of men, animals and terrestrial products. Physical maps.  
 CLASS 724.—METEOROLOGICAL MAPS AND BULLETINS, MAGNETICAL MAPS, and other graphic representations.  
 CLASS 725.—TELEGRAPHIC ROUTES AND STATIONS, courses of submarine-cables, &c.  
 CLASS 726.—RAILWAY AND ROUTE MAPS.  
 CLASS 727.—TERRESTRIAL AND CELESTIAL GLOBES.  
 CLASS 728.—RELIEF MAPS AND MODELS OF PORTIONS OF THE EARTH'S SURFACE.  
 CLASS 729.—MAPS AND SECTIONS OF MINES. Section-models of geological formations and of mines and mineral-deposits.

## GROUP 73.

## TELEGRAPHIC INSTRUMENTS AND METHODS.

- CLASS 730.—BATTERIES AND FORMS OF APPARATUS USED IN GENERATING THE ELECTRICAL CURRENTS FOR TELEGRAPHIC PURPOSES.  
 CLASS 731.—CONDUCTORS AND INSULATORS, AND METHODS OF SUPPORT.—Marine telegraph-cables.  
 CLASS 732.—APPARATUS OF TRANSMISSION.—Keys, office accessories, and apparatus.  
 CLASS 733.—RECEIVING INSTRUMENTS, RELAY MAGNETS, LOCAL CIRCUITS, &c.  
 CLASS 734.—SEMAPHORIC AND RECORDING INSTRUMENTS.  
 CLASS 735.—CODES, SIGNS, OR SIGNALS.  
 CLASS 736.—PRINTING TELEGRAPHS FOR SPECIAL USES.  
 CLASS 737.—ELECTROGRAPHS.  
 CLASS 738.—DIAL OR CADRAN SYSTEMS.  
 CLASS 739.—APPARATUS FOR AUTOMATIC TRANSMISSION.

## GROUP 74.

## INSTRUMENTS OF PRECISION, AND APPARATUS OF PHYSICAL RESEARCH, EXPERIMENT AND ILLUSTRATION.

- CLASS 740.—ASTRONOMICAL INSTRUMENTS AND ACCESSORIES, USED IN OBSERVATIONS.—Transits, transit-circles, mural-circles, zenith sectors,

altazimeters, equatorials, collimators, comet-seekers, vertical circles, extrameridional transits, prime vertical transits, zenith-telescopes, reflex zenith-sectors, sextants, quadrants, repeating-circles, dip-sectors, &c.

CLASS 740 $\frac{1}{2}$ .—GEODETIC AND SURVEYING INSTRUMENTS.—Transits, theodolites, sextants and artificial horizons, needle compasses, goniometers. Instruments for surveying underground in mines, tunnels, and excavations. Pocket sextants. Plane tables, and instruments used with them, engineers' levels, leveling-staves, targets, and accessory apparatus.

CLASS 741.—LEVELING INSTRUMENTS AND APPARATUS.—Carpenters' and builders' levels, hand-levels, water-levels, of all patterns and varieties.

CLASS 741 $\frac{1}{2}$ .—HYDROGRAPHIC SURVEYING, DEEP-SEA SOUNDING; electrical sounding apparatus; deep-sea thermometers; current-meters.

CLASS 742.—PHOTOMETRIC APPARATUS AND METHODS.

CLASS 742 $\frac{1}{2}$ .—MECHANICS IN GENERAL.

CLASS 743.—ACOUSTICS.

CLASS 743 $\frac{1}{2}$ .—OPTICS, spectroscopes, polarimeters, &c.

CLASS 744.—ELECTRICITY AND MAGNETISM.

CLASS 744 $\frac{1}{2}$ .—MATHEMATICAL APPARATUS AND ILLUSTRATIONS.

CLASS 745.—TIDES, EARTHQUAKES, &c.

CLASS 745 $\frac{1}{2}$ .—TERRESTRIAL MAGNETISM.

CLASS 746.—THERMATICS.

CLASS 746 $\frac{1}{2}$ .—STRENGTH OF MATERIALS.

CLASS 747.—EXPLOSIVE POWER OF GUN-COTTON, &c.

## GROUP 75.

### METEOROLOGICAL INSTRUMENTS AND APPARATUS.

CLASS 750.—THERMOMETERS.—Mercurial, spirit, air; ordinary or self-registering, maximum and minimum. Pyrometers, chronometric thermometers, black-bulb radiation thermometers. [See also Class 744.]

CLASS 750 $\frac{1}{2}$ .—BAROMETERS, mercurial and aneroid; ordinary and self-registering.

CLASS 751.—ANEMOMETERS and anemascope; ordinary and self-registering.

CLASS 751 $\frac{1}{2}$ .—HYGROSCOPES, psychrometers.

CLASS 752.—RAIN-GAUGES, ordinary and self-registering.

CLASS 753.—EVAPOMETERS.

CLASS 753 $\frac{1}{2}$ .—APPARATUS FOR OBSERVING ATMOSPHERIC ELECTRICITY.

CLASS 754.—OZONOMETERS.

CLASS 754 $\frac{1}{2}$ .—APPARATUS FOR DETERMINING THE DISTANCE, ALTITUDE, AND DIRECTION OF CLOUDS, AURORAS, &c.

CLASS 755.—OCTINOMETERS, chemical.

CLASS 755 $\frac{1}{2}$ .—CYANOMETERS.

CLASS 756.—METEOROGRAPHS.—Combined self-registering apparatus.

CLASS 756 $\frac{1}{2}$ .—BLANKS FOR RECORDING OBSERVATIONS.—Methods of recording, reducing and reporting observations.

## GROUP 76.

### MECHANICAL CALCULATION; INDICATING AND REGISTERING APPARATUS, OTHER THAN METEOROLOGICAL.

CLASS 760.—COUNTING MACHINES, CALCULATING ENGINES, ARITHMOMETERS.

CLASS 761.—PLANIMETRY.



CLASS 762.—APPARATUS FOR PRINTING CONSECUTIVE NUMBERS.

CLASS 763.—REGISTERS OF REVOLUTIONS OF PARTS OF MACHINERY.—  
Viameters or instruments for recording the number of revolutions of  
wagon-wheels upon roads; pedometers, perambulators.

CLASS 764.—GAS-METERS.

CLASS 765.—WATER-METERS, CURRENT-METERS, SHIPS' LOGS, ELEC-  
TRICAL LOGS.

CLASS 766.—MANOMETERS—Steam-gauges, dynamometers, and appa-  
ratus for indicating pressure.

CLASS 767.—TIDE REGISTERS.

#### GROUP 77.

WEIGHTS, MEASURES, AND COINS; WEIGHING AND METROLOGICAL  
APPARATUS.

CLASS 770.—MEASURES OF LENGTH.—Graduated scales on wood,  
metal, ivory, tape, or ribbon; steel tapes, chains, rods, comparators, cath-  
etometers.

CLASS 771.—MEASURES OF CAPACITY—SOLIDS.

CLASS 772.—MEASURES OF CAPACITY—LIQUIDS.

CLASS 773.—WEIGHTS.

CLASS 774.—SCALES AND GRADUATED BEAMS FOR WEIGHING.

a. Assay balances.

b. Chemical balances.

c. Ordinary scales for commercial transactions.

d. Platform scales for heavy weights; weighing locomotives and  
trains of cars.

e. Postal balances.

CLASS 775.—Hydrometers, alcohometers, lactometers, &c.; gravim-  
eters.

CLASS 776.—RODS AND GRADUATED SCALES for measuring lumber,  
goods in packages, casks, &c.; gaugers' tools and methods.

CLASS 777.—COINS AND COINING.

CLASS 778.—COLLECTIONS TO ILLUSTRATE IMPORTANCE OF SECUR-  
ING INTERNATIONAL UNIFORMITY IN WEIGHTS, MEASURES, AND COINS.

#### GROUP 78.

CHRONOMETRIC APPARATUS—TIME MEASURES OF ALL KINDS.

CLASS 780.—ASTRONOMICAL AND OTHER ACCURATE CHRONOMETERS;  
WATCHES.

CLASS 781.—WATCHES.

CLASS 782.—ASTRONOMICAL CLOCKS.

CLASS 783.—CHURCH AND METROPOLITAN AND ORDINARY CLOCKS.

CLASS 784.—CLEPSYDRAS, HOUR-GLASSES, SUN-DIALS.

CLASS 785.—CHRONOGRAPHS.

CLASS 786.—METRONOMES.

CLASS 787.—CLOCKS CONTROLLED, DRIVEN, OR REGULATED BY ELEC-  
TRICITY.

#### GROUP 79.

MUSICAL INSTRUMENTS AND ACOUSTIC APPARATUS.

CLASS 790.—PERCUSSION INSTRUMENTS, such as drums, tambourines,  
cymbals, triangles, bells.

CLASS 791.—PIANOS.

CLASS 792.—STRINGED INSTRUMENTS other than pianos.

CLASS 793.—AUTOMATIC MUSICAL INSTRUMENTS, MUSIC-BOXES, &c.

CLASS 794.—WIND INSTRUMENTS of metal and of wood.

CLASS 795.—HARMONIUMS.

CLASS 796.—CHURCH ORGANS and other similar instruments.

CLASS 797.—SPEAKING-MACHINES.

CLASS 798.—VOCAL MUSIC.

---

## DEPARTMENT VIII.

ENGINEERING, PUBLIC WORKS, ARCHITECTURE, ETC.

### GROUP 80.

#### AGRICULTURAL ENGINEERING.

CLASS 800.—LAYING OUT FARMS, CONSTRUCTION OF ROADS, draining, irrigating, and construction of farm buildings.

CLASS 801.—PREPARATION OF THE GROUND, AND PLANTING.

CLASS 802.—CULTIVATION, &c.

CLASS 803.—HARVESTING.

CLASS 804.—CLEANING, PREPARING, PACKING, AND PRESERVATION OF CROPS.

CLASS 805.—Farm transportation.

CLASS 806.—TREATMENT OF THE SOIL.—Improvement, preservation, restoration, and increase of its productive capacity. Use of fertilizers.

CLASS 807.—REARING, CARE, and management of stock.

CLASS 808.

CLASS 809.—FARM SUPERINTENDENCE AND MANAGEMENT.

### GROUP 81.

#### MINING ENGINEERING.

CLASS 810.—SURFACE AND UNDERGROUND SURVEYING AND PLOTTING.—Projection of underground work, location of shafts, tunnels, &c.—surveys for aqueducts and for drainage.

CLASS 811.—BORING AND DRILLING ROCKS, SHAFTS AND TUNNELS.—Borings for water, oil, or other substances, and for ascertaining the nature and extent of mineral deposits.

CLASS 812.—CONSTRUCTION, SINKING, AND LINING SHAFTS, by various methods; driving and timbering tunnels, and the general operations of opening, stoping, and breaking down ore; timbering, logging, and masonry.

CLASS 813.—HOISTING AND DELIVERING AT THE SURFACE, ROCK, ORE, OR MINERS.

CLASS 814.—PUMPING AND DRAINING by engines, buckets, or by adits.

CLASS 815.—VENTILATION, LIGHTING, &c.

CLASS 816.—SUBAQUEOUS MINING, BLASTING, &c.

CLASS 817.—HYDRAULIC MINING, and the various processes and methods of sluicing and washing auriferous gravels, and other superficial deposits.

CLASS 818.—QUARRYING.

### GROUP 82.

#### CIVIL ENGINEERING.

CLASS 820.—CONSTRUCTION AND MAINTENANCE of roads, street pavements, &c.



CLASS 821.—SURVEYS AND LOCATION of towns and cities with systems of water supply and drainage.

CLASS 822.—BRIDGES OF STONE, BRICK, OR BÉTON.

CLASS 823.—IRON AND STEEL BRIDGES.

CLASS 824.—SUSPENSION BRIDGES.

CLASS 825.—CANALS, AQUEDUCTS, RESERVOIRS, construction of dams, &c. Hydraulic engineering, and means for arresting and controlling flow of water; water supply.

### GROUP 83.

DYNAMIC AND INDUSTRIAL ENGINEERING.

### GROUP 84.

RAILWAY ENGINEERING.

### GROUP 85.

PUBLIC WORKS AND ARCHITECTURE.

### GROUP 86.

### GROUP 87.

SUBMARINE CONSTRUCTIONS, FOUNDATIONS, PIERS, DOCKS, ETC.

### GROUP 88.

MILITARY ENGINEERING.

### GROUP 89.

NAVAL ENGINEERING.



## DEPARTMENT IX.

PLASTIC AND GRAPHIC ARTS.

### GROUP 90.

SCULPTURE.

### GROUP 91.

PAINTING.

### GROUP 92.

LINE-DRAWING, ENGRAVING, AND DIE-SINKING.

### GROUP 93.

CHROMO-LITHOGRAPHY AND LITHOGRAPHY.

## GROUP 94.

## PHOTOGRAPHY.

CLASS 940.—LANDSCAPE PHOTOGRAPHS.

CLASS 941.—ARCHITECTURAL.

CLASS 942.—FROM ANIMATE OBJECTS—PORTRAITS.

CLASS 943.—PHOTO-RELEIF PLATES—ALBERTYPES, WOODBURY-TYPES, HELIOTYPES, &c.

CLASS 944.—REPRODUCTIONS OF ENGRAVINGS, PAINTINGS, DESIGNS AND DRAWINGS.

CLASS 945.—BAS-RELIEF, METAL ORNAMENTS, SHELLS, AND SMALL OBJECTS IN RELIEF, particularly of fossils and “natural history” specimens.

CLASS 946.—PHOTO-LITHOGRAPHIC, PHOTO-ZINCOGRAPHIC PROCESSES, &c.

CLASS 947.—ON PORCELAIN, IVORY, METAL, LEATHER, OR OTHER POLISHED SURFACES.

CLASS 948.—NEGATIVES ON GLASS FOR STEREOSCOPES; NEGATIVES BY DRY-PLATE PROCESS.

## GROUP 95.

## INDUSTRIAL DESIGNS.

## GROUP 96.

## MOSAIC AND INLAID WORK.

## GROUP 97.

## ARCHITECTURAL DESIGNS AND MODELS.

CLASS 970.—ECCLESIASTICAL.

CLASS 971.—PUBLIC BUILDINGS.

CLASS 972.—CITY RESIDENCES.

CLASS 973.—COUNTRY OR SEA-SIDE RESIDENCES.

CLASS 974.—FARM-HOUSES AND OUTBUILDINGS.

CLASS 975.—EXTERIOR AND INTERIOR DECORATION, DETAILS OF.

## GROUP 98.

DECORATION AND FURNISHING OF INTERIORS OF PUBLIC AND PRIVATE BUILDINGS.

[This group is designed to include special exhibitions of harmonious combinations of objects included under various groups and classes.]

## GROUP 99.

## LANDSCAPE GARDENING.

CLASS 990.—LOCATION OF ROADS, BUILDINGS AND PLANTS, AND MODIFICATIONS OF THE SURFACE.

CLASS 991.—CONSTRUCTION AND GRADING OF ROADWAYS AND PATHS.

CLASS 992.—TREE AND SHRUB GROUPING.

CLASS 993.—TREATMENT OF GRASS AND LAWNS.



CLASS 994.—DESIGNS FOR FLOWER-PLANTING, PLANT-GROUPING, &c.

CLASS 995.—MANAGEMENT OF WATER-DRAINAGE, &c.—Rivulets, rivers, water-supply of gardens and lawns, cascades, fountains, reservoirs, and lakes.

CLASS 996.—RUSTIC CONSTRUCTIONS AND ADORNMENTS.

CLASS 997.—ROCK-WORK AND FERNERIES.

CLASS 998.—HEDGES, TRIMMED PLANTS, SUBSTITUTES FOR FENCES, &c.

## DEPARTMENT X.

SYSTEMS, OBJECTS, AND APPARATUS ILLUSTRATING EFFORTS FOR THE IMPROVEMENT OF THE PHYSICAL, INTELLECTUAL, AND MORAL CONDITION OF MAN.

### GROUP 100.

#### PHYSICAL DEVELOPMENT AND CONDITION.

CLASS 1000.—THE NURSERY AND ITS ACCESSORIES.

CLASS 1001.—GYMNASIUMS, GAMES, AND MANLY SPORTS.—Skating, walking, climbing, ball-playing, wrestling, acrobatic exercises; rowing, hunting, &c.

CLASS 1002.—ALIMENTATION.—Markets; preparation and distribution of food.

CLASS 1003.—THE DWELLING, with its sanitary conditions and regulations.

*a.* Dwellings for mechanics and working-men.

*b.* Dwellings for farmers and farm laborers.

*c.* Dwellings characterized by cheapness, combined with the conditions essential to health and comfort.

*d.* Tenement houses.

*e.* "Flats" and suites of apartments.

CLASS 1004.—HOTELS, RESTAURANTS, LODGING-HOUSES.

CLASS 1005.—PUBLIC BATHS AND LAVATORIES.

### GROUP 101.

#### SANITARY.

CLASS 1010.—MEDICINE AND SURGERY.

CLASS 1011.—RELIEF TO THE WOUNDED.—Sanitary commissions and their work; Medical and Surgical History of the War.

CLASS 1012.—GENERAL HOSPITALS.

CLASS 1013.—HOSPITALS FOR CONTAGIOUS AND INFECTIOUS DISEASES.

CLASS 1014.—HOSPITALS FOR THE INSANE.

*a.* Under state control, and

*b.* Private asylums.

CLASS 1015.—QUARANTINE SYSTEM AND ORGANIZATION.

CLASS 1016.—SANITARY LAWS AND REGULATIONS OF CITIES.

*a.* Disinfection.

*b.* Ventilation.

*c.* Removal of offal and refuse.

*d.* Organization and work of health boards.

*e.* Cemeteries.

CLASS 1017.—ASYLUMS.

## GROUP 102.

## BENEVOLENCE.

CLASS 1020.—TREATMENT OF PAUPERS.—Alms-houses, feeding the poor, lodging-houses.

CLASS 1021.—ASYLUMS FOR INFANTS AND CHILDREN.—Foundling and orphan asylums, children's aid societies, &c.

CLASS 1022.—HOMES FOR THE AGED AND INFIRM.—Homes for aged men and women; soldiers' homes; homes for the maimed and deformed; sailors' homes.

CLASS 1023.—EMIGRANT AID SOCIETIES.

CLASS 1024.—HOMES FOR THE DEFORMED AND ABNORMALLY DEVELOPED.

CLASS 1025.—TREATMENT OF ABORIGINES.

CLASS 1026.—PREVENTION OF CRUELTY TO ANIMALS.

## GROUP 103.

## GOVERNMENT AND LAW.

CLASS 1030.—VARIOUS FORMS OF GOVERNMENT.

CLASS 1031.—DEPARTMENTS OF GOVERNMENT.

*a.* Revenue and taxation.

*b.* Military and naval methods of defense.

*c.* Executive powers.

*d.* Legislative forms and authority.

*e.* Judicial functions and systems.

*f.* Police regulations; government charities.

*g.* International relations; international law; diplomatic and consular service, &c.

*h.* Allegiance and citizenship; naturalization.

CLASS 1032.—MUNICIPAL GOVERNMENT.

CLASS 1033.—PROTECTION OF PROPERTY IN INVENTIONS.

CLASS 1034.—POSTAL SYSTEMS AND APPLIANCES.

CLASS 1035.—PUNISHMENT OF CRIME.

*a.* Prisons and prison management and discipline.

*b.* Transportation of criminals; penal colonies.

*c.* Houses of correction; reform schools.

*d.* Naval or marine discipline; punishment at sea.

*e.* Police stations; night lock-ups, &c.

## GROUP 104.

## RELIGIOUS ORGANIZATIONS AND SYSTEMS.

CLASS 1040.—ORIGIN, NATURE, GROWTH AND EXTENT OF VARIOUS RELIGIOUS SYSTEMS AND SECTS.—Statistical, historical and other facts.

CLASS 1041.—RELIGIOUS ORDERS AND SOCIETIES, AND THEIR OBJECTS.

CLASS 1042.—SOCIETIES AND ORGANIZATIONS FOR THE PROPAGATION OF SYSTEMS OF RELIGION, BY MISSIONARY EFFORT.—Their extent, conduct, and statistics of their operations.

CLASS 1043.—SPREADING THE KNOWLEDGE OF RELIGIOUS SYSTEMS BY PUBLICATIONS.—Specimens of the publications of the Bible societies, Tract Society, American Sunday-School Union; their statistics.



CLASS 1044.—SYSTEMS AND METHODS OF RELIGIOUS INSTRUCTION AND TRAINING FOR THE YOUNG.—Teachings in the family. Sunday-school furniture and apparatus.

### GROUP 105.

#### EDUCATION.

CLASS 1050.—PRIMARY EDUCATION.—Infant schools.

CLASS 1051.—PUBLIC-SCHOOL SYSTEMS.

CLASS 1052.—SPECIAL SCHOOLS OF SCIENCE, LAW, MEDICINE, AND THEOLOGY.

CLASS 1053.—UNIVERSITY EDUCATION.

CLASS 1054.—TECHNICAL EDUCATION.—Institutes of technology.

CLASS 1055.—ART SCHOOLS, CLASSES, AND INSTRUCTION.

CLASS 1056.—INSTRUCTION BY LECTURES.

CLASS 1057.—LIBRARIES.

CLASS 1058.—EDUCATION OF THE ABNORMALLY DEVELOPED.

CLASS 1059.—GOVERNMENT AID TO THE CAUSE OF EDUCATION.—Mechanic arts and agricultural colleges.

### GROUP 106.

INSTITUTIONS, SOCIETIES AND ORGANIZATIONS HAVING FOR THEIR OBJECT THE PROMOTION OF SCIENCE.

CLASS 1060.—CHEMICAL AND PHYSICAL.

CLASS 1061.—ASTRONOMICAL SOCIETIES AND ASTRONOMICAL OBSERVATORIES.

CLASS 1062.—GEOLOGICAL AND MINERALOGICAL SOCIETIES.

CLASS 1063.—BIOLOGICAL, ZOÖLOGICAL, MEDICAL, &c.

CLASS 1064.—PHILOLOGICAL.

CLASS 1065.—ETHNOLOGICAL AND SOCIOLOGICAL.

CLASS 1066.—ARCHÆOLOGICAL AND HISTORICAL.

CLASS 1067.—ENGINEERING AND TECHNICAL.

CLASS 1068.—COLLECTIONS AND MUSEUMS, ILLUSTRATING THE PROGRESS OF SCIENCE.

CLASS 1069.—INSTITUTIONS AND ASSOCIATIONS, FOUNDED FOR THE INCREASE AND DIFFUSION OF KNOWLEDGE, such as the Smithsonian Institution, the Royal Institution, the Institute of France, British Association for the Advancement of Science, the Franklin Institute, Academy of Natural Sciences, and the American Association, &c.—their organization, history, and results.

### GROUP 107.

CO-OPERATIVE COMMERCIAL AND FINANCIAL [INSURANCE ASSOCIATIONS.

CLASS 1070.—POLITICAL SOCIETIES AND ORGANIZATIONS.

CLASS 1071.—WORKINGMEN'S UNIONS AND ASSOCIATIONS.—Their organizations, statistics, and results.

CLASS 1072.—INDUSTRIAL ORGANIZATIONS, such as the Iron and Steel Association, the American Woolen Manufacturers' Association, &c.

CLASS 1073.—INTERNATIONAL CONGRESSES FOR VARIOUS PURPOSES.

CLASS 1074.—SECRET SOCIETIES.

CLASS 1075.—MISCELLANEOUS ORGANIZATIONS for promoting the material and moral well-being of the industrial classes.

CLASS 1076.—BANKING.

CLASS 1077.—INSURANCE.

a. Insurance of person.

b. Insurance of property.

### GROUP 108.

#### MUSIC AND THE DRAMA.

### GROUP 109.

#### EXHIBITION OF WORKS OF ART AND INDUSTRY.

CLASS 1090.—AGRICULTURAL FAIRS; State and county exhibitions.

CLASS 1091.—NATIONAL EXHIBITIONS.

CLASS 1092.—ART MUSEUMS AND COLLECTIONS.

CLASS 1093.—MUSEUMS OF INVENTIONS AND OF ART applied to industry.

CLASS 1094.—INTERNATIONAL EXHIBITIONS.

---

[Official.]

### INTERNATIONAL EXPOSITION—1876.

*By the President of the United States :*

#### EXECUTIVE ORDER.

Whereas, it has been brought to the notice of the President of the United States that, in the International Exhibition of Arts, Manufactures, and Products of the Soil and Mine, to be held in the city of Philadelphia, in the year eighteen hundred and seventy-six, for the purpose of celebrating the one hundredth anniversary of the Independence of the United States, it is desirable that, from the Executive Departments of the Government of the United States, in which there may be articles suitable for the purpose intended, there should appear such articles and materials as will, when presented in a collective exhibition, illustrate the functions and administrative faculties of the Government in time of peace, and its resources as a war-power, and thereby serve to demonstrate the nature of our institutions and their adaptations to the wants of the people:

Now, for the purpose of securing a complete and harmonious arrangement of the articles and materials designed to be exhibited from the Executive Departments of the Government, it is ordered that a board, to be composed of one person, to be named by the head of each of the Executive Departments which may have articles and materials to be exhibited, and also of one person to be named in behalf of the Smithsonian Institution, and one to be named in behalf of the Department of Agriculture, be charged with the preparation, arrangement, and safe-keeping of such articles and materials as the heads of the several Departments and the



Commissioner of Agriculture and the Director of the Smithsonian Institution may respectively decide shall be embraced in the collection; that one of the persons thus named, to be designated by the President, shall be chairman of such board; and that the board appoint from their own number such other officers as they may think necessary; and that the said board, when organized, be authorized, under the direction of the President, to confer with the executive officers of the Centennial Exhibition in relation to such matters connected with the subject as may pertain to the respective Departments having articles and materials on exhibition; and that the names of the persons thus selected by the heads of the several Departments, the Commissioner of Agriculture, and the Director of the Smithsonian Institution shall be submitted to the President for designation.

By order of the President :

HAMILTON FISH,  
*Secretary of State.*

WASHINGTON, *January 23, 1874.*

DEPARTMENT OF STATE,  
*Washington, March 25, 1874.*

SIR: I have the honor to inform you that, in accordance with the order of the President of the 23d of January last, the following persons have been named by the heads of the several Departments, &c., mentioned in the order, having articles or materials to be exhibited at the Centennial Exhibition to be held in 1876, to compose the board directed to be created by the said order, viz:

By the Secretary of the Treasury—Hon. F. A. Sawyer.

By the Secretary of War—Col. S. C. Lyford, U. S. A.

By the Secretary of the Navy—Admiral T. A. Jenkins, U. S. N.

By the Secretary of the Interior—John Eaton, esq.

By the Postmaster-General—Dr. Charles F. McDonald.

By the Department of Agriculture—William Saunders, esq.

By the Smithsonian Institution—Prof. S. F. Baird.

I have the honor further to inform you that the President has designated Col. S. C. Lyford, U. S. A., to be the chairman of such board.

I have the honor to be, sir, your obedient servant,

HAMILTON FISH.

The Hon. WILLIAM W. BELKNAP,  
*Secretary of War.*

*The above and the Executive order preceding it were embodied in General Orders of the War Department, No. 28, published to the Army.*

## REPORT OF THE COMMITTEE ON PLANS AND ARCHITECTURE.

[For first report see page 94.]

To the Hon. D. J. MORRELL,

*Chairman Executive Committee United States Centennial Commission.*

DEAR SIR: The committee on plans and architecture would respectfully present the following

### REPORT :

On April 1, 1873, a circular was issued by this committee from the office of the {commission, inviting all architects, engineers, and others

interested in the cause of the Centennial Exhibition, to offer preliminary sketches of designs for the International Exhibition buildings in Fairmount Park, Philadelphia. At the same time three documents were prepared, and afterward distributed to each party applying in response to the circular, for information to enable them to prepare the designs:

1. Specifications giving certain information with regard to the requirements of the buildings;

2. A topographical map showing the site in the park;

3. A pamphlet giving the system of classification to be embodied in the buildings.

The latest time for placing the competitive drawings in the hands of the committee was fixed at noon, July 15, 1873; and the manner of distributing the awards was announced as follows: "From these preliminary sketches of designs there will be selected ten (if there be found that number sufficiently meritorious to be admitted to the second competition), for each of which shall be paid the sum of one thousand dollars." It was also stated in the specifications that the conditions, &c., for a second or limited competition between the successful competitors in the first competition would be announced at or prior to the close of the first competition.

In response to this proposal for plans, one hundred and seventy-three different parties made application for information, and received the documents.

On July 16, 1873, the committee announced to the public that forty-three sketches had been received from the following, viz:

1. W. Brotherhead, Philadelphia.
2. Charles Altenheim, New York.
3. Max Schroff, New York.
4. Geo. A. Shove, Dighton, Mass.
5. Albert Baker, Westfield, Pa.
6. R. M. Chalmers, San Francisco, Cal.
7. Arthur Beckwith, New York.
8. Ad. Stierle, Lewes, Del.
9. Samuel Sloan, Philadelphia.
10. Ephraim Kramm, East New York, L. I.
11. { John McArthur, jr., Philadelphia.
- { Joseph M. Wilson, Philadelphia.
12. Aneurin Jones, New York.
13. Brogald, Marshall & Welch, New York.
14. Benjamin D. Price, Philadelphia.
15. James C. Sidney, Philadelphia.
16. W. E. Winner, Philadelphia.
17. G. A. Wheeler, Philadelphia.
18. Wisedell & Farnesworth, New York.
19. Samuel Brown, Philadelphia.
20. J. S. Fairfax, Wheeling, W. Va.
21. Calvert Vaux and G. K. Radford, New York.
22. Thomas M. Plowman & Co., Washington, D. C.
23. Collins & Autenrieth, Philadelphia.
24. Francis R. Gatchell and Stephen Rush, Philadelphia.
25. J. A. Vrydagh, Terre Haute, Ind.
26. Oakey & Jones, New York.
27. W. J. Gladish, Alabama.
28. Alfred W. Thorp, New York.
29. James Freret, New Orleans.



30. W. Redfield Phelps, Philadelphia.
31. S. Small, for author.
32. C. C. Clark and H. A. and J. P. Sims, Philadelphia.
33. J. W. Murphy, Philadelphia.
34. John Crump, Philadelphia.
35. A. B. Jones, Philadelphia.
36. John Fraser, Washington.
37. Hobbs & Son, Philadelphia.
38. J. A. Vrydagh, Terre Haute, Ind.
39. D. H. Gorsuch, Baltimore, Md.
40. Schultz & Shoen, New York.
41. Not photographed.
42. Frank W. Vogdes, Louisville, Ky.
43. P. J. Lofland, Columbus, Ohio.

On August 8, the following were selected as the ten successful competitors to be admitted to the second competition :

- Mr. Samuel Sloan, Philadelphia.
- Messrs. John McArthur and Jos. M. Wilson, Philadelphia.
- Mr. John C. Sidney, Philadelphia.
- Mr. J. L. Fairfax, Wheeling, West Virginia.
- Messrs. Calvert Vaux and G. K. Radford, New York City.
- Mr. Thos. M. Plowman, Washington, D. C.
- Messrs. Collins & Autenrieth, Philadelphia.
- Messrs. Francis R. Gatchell and Stephen Rush, Philadelphia.
- Mr. J. A. Vrydagh, Terre Haute, Ind.
- Messrs. H. A. and J. P. Sims, Philadelphia.

At the same time the conditions, &c., for the second competition were issued.

For the second and final competition the committee fixed the latest time for the reception of the revised designs at September 30, 1873. The sum of \$10,000 was fixed as the award to the successful competitor. Upon the unanimous agreement of the competing parties, this sum was subsequently divided into four items, viz: \$4,000, \$3,000, \$2,000, and \$1,000, to be distributed to the four most meritorious designs in the order of merit. Each of the ten competing architects received a set of photographic copies of the ten selected designs, with printed descriptions, upon a written statement being received by the committee that he intended to enter for the second competition.

On September 30 the ten competitors had sent in their revised designs, viz:

1. John C. Sidney, Philadelphia, 9 sheets.
2. Thomas M. Plowman, Washington, 10 sheets.
3. Gatchell & Rush, Philadelphia, 9 sheets.
4. Sims & Brother, Philadelphia, 7 sheets.
5. Samuel Sloan, Philadelphia, 20 sheets.
6. McArthur & Wilson, Philadelphia, 12 sheets.
7. Vaux & Radford, New York, model and 4 sheets.
8. Collins & Autenrieth, Philadelphia, 22 sheets.
9. J. L. Fairfax, Wheeling, W. Va., 9 sheets.
10. J. A. Vrydagh, Terre Haute, Ind., 12 sheets.

All these designs submitted for the final competition show great care, skill, and labor on the part of the several architects and engineers in carrying out the requirements of the specifications, and they each pre-



sent so many points of excellence that it has embarrassed the committee in its efforts to arrive at a satisfactory conclusion in the matter.

Since October 15 the committee has been continuously in session, and, after a careful examination of the merits of each design, would now present its final decision for your consideration.

In order to make the awards for this second competition, the relative merits of the different designs have been discussed and decided upon solely with respect to their meeting the requirements stated in the specifications. The committee has not been influenced by any additional points now deemed of equal importance, but which have presented themselves since the issue of the specifications. Such action was of course the only just one to the competing parties, but results in giving the awards to some designs which are radically different from that which it *now* deems advisable to erect. It must be borne in mind, however, that the committee in no way bound itself to recommend any of the designs presented, unless they were deemed in every respect the best for the purpose.

It recommends that the awards for the second competition be granted as follows :

Collins & Autenrieth, 1st award.....	\$4, 000
Samuel Sloan, 2d award.....	3, 000
McArthur & Wilson, 3d award.....	2, 000
H. A. & J. P. Sims, 4th award.....	1, 000

At the same time, however, that it recommends the above awards, in accordance with the requirements of the competition, it would distinctly state that in its judgment no one of the above designs can be considered as representing entirely satisfactorily what is required for the centennial buildings.

The estimates vary from \$2,871,500 for the temporary industrial palace alone, built entirely of combustible materials, and without any permanent memorial hall, up to \$10,050,000, which includes a permanent memorial hall, built of iron and brick, with heating apparatus, organ, &c., complete.

The consideration of these estimates, and the full realization of the great importance of undertaking to erect only such structures as can be satisfactorily completed without doubt within a reasonable time prior to the opening of the Exhibition, have induced the committee to materially change its original intentions.

It is gratified, however, to be able to present for adoption a plan for the main Exhibition building, and a general arrangement for the other structures and the grounds, that will, in its opinion, more nearly answer the requirements of the occasion, and, if executed, insure a more satisfactory general arrangement for the working of the Exhibition than is shown by any one of the designs, as a whole, that has been submitted. The committee also considers that it is feasible to carry out the arrangement which it proposes, at a reasonable cost for such a great undertaking, and that the work can be completed without fail prior to the opening of the Exhibition. It is also of the opinion that, when once fully understood by the public, the arrangement will become especially popular, in consequence of introducing novel and characteristic features which will make the Exhibition not only convenient for exhibitors, but eminently attractive to the visiting public.

It is proper to state some of the conclusions which have been reached by the committee after examining the designs submitted, and after a more matured consideration of the subject in all its bearings and require-



ments. These conclusions have, of course, guided the committee in preparing the plan proposed.

1. A careful consideration of the relations of the Centennial Commission to the appropriations made by the State of Pennsylvania and City of Philadelphia for the erection of a memorial building, the purposes for which the art building and memorial hall were originally intended, and of the great expense that must be incurred to properly construct either one of these buildings, has made it evident to the committee that it is not feasible to erect two separate and distinct structures, each of which would necessarily have to be of a like and permanent character.

2. That the art gallery should be placed during the period of the Exhibition within the memorial building, and the proposed separate structure for the art gallery dispensed with.

3. That the art gallery (or memorial hall) should be a separate and distinct structure from the main Exhibition building, but sufficiently near to it to be easily accessible by covered ways, so as to form a part of and harmonize with the general Exhibition.

4. That for the art gallery (or memorial hall) a building covering at a maximum one and a half acres of ground will be ample for the requirements of the art department of the Exhibition.

5. That the art gallery (or memorial hall) should be located upon the piece of ground immediately north of the main Exhibition building, and included within the curve formed by the Lansdowne drive. This site, which affords about ten acres, is, in the opinion of the committee, the only one upon which the memorial hall can be placed, so that it will form the great center of attraction during the Exhibition, and remain well located after the other buildings are removed.

6. The committee has also concluded that it will be necessary to erect the following buildings, viz:

1. The art gallery, covering one and a half acres.

2. The grand pavilion, or main industrial hall, covering thirty-six acres.

3. The machinery hall, covering ten acres.

4. The agricultural hall, covering five acres.

5. The conservatory.

6. Also, from time to time, smaller buildings for specific purposes, as annexes to the above.

7. That the Grand Pavilion, which is a temporary construction, must cover at a minimum thirty acres of ground, and be capable of extension, if required, as the work progresses. That it must be rectangular in plan and without curved corridors, and that no galleries must be constructed for exhibition purposes proper; but small balconies may be judiciously introduced for observation. It shall also allow the various offices of the exhibitors to be in the building, and comparatively near their own departments. That the interior arrangement should allow of vistas and attractive promenades, and afford opportunities for the convenient assembling of a large number of people, as at Sydenham Palace and in the most successful English exhibition buildings. That in the construction, the reduplication of parts should be an essential feature; that iron and brick should form the principal parts of the structure, in order to afford a reasonable protection against fire, and that they should be combined with such details that the material shall realize a fair price after the Exhibition is closed. That vertical side light should be preferred to overhead light. That with regard to the exterior of the building, although domes, towers, and central massive features, when effectively introduced, greatly enhance the dignity and beauty of such build-



ings, yet in this case, considering both the time at our disposal and the expense that great ornamentation would incur, it is not expedient or advisable to undertake such ambitious and expensive constructions. The Grand Pavilion, being a temporary building, must trust for its impressiveness to its great size, the proper treatment of its elevations, and to its interior vistas and arrangement, and not to any central feature erected at a great expense only to remain a few months. The main approach to the Grand Pavilion must be from the east side, nearest the city, and shall allow vehicles to approach near to the building, and afford ample and convenient arrangement for the rapid reception and exit of large crowds.

8. That the machinery hall should be located on the north side of Elm avenue, and west of Belmont avenue, and the agricultural hall immediately north and parallel to the machinery hall. This site is chosen on account of its affording direct communication with the main railroad lines entering the city, and obviating the necessity of transporting heavy freight-trains through the park grounds. It also possesses this advantage, that the boiler and engine houses may be placed either along Elm avenue or between the buildings, which arrangement will be convenient for the supply of fuel, and prevent such buildings from being too conspicuous.

9. That the conservatory and horticultural department should be situated on Lansdowne terrace.

The plan of the Grand Pavilion presented by this committee for adoption is an adaptation to our requirements of the "Pavilion Plan" sent in by Messrs. Calvert Vaux and George Kent Radford, of New York, for the first competition; but to which no award was given in the second competition, because the requirements of the specifications were not complied with. A portion of the proposed arrangement also embodies the principal idea presented in the design sent in by Messrs. Henry A. Sims and James P. Sims, of Philadelphia.

The plan of the building is rectangular, being 2,040 feet long by 680 feet wide, with greater width at the center and ends up to 952 feet. The governing dimension on the plan is a square or pavilion measuring 136 feet on each side. The main parallelogram forming the building is therefore fifteen of these pavilions long, and five pavilions wide, an area equal to 31.84 acres. The increased width is obtained by adding on the long sides projections of three pavilions at the center, and one at each end.

It is proposed to cover the three center series of squares, for both the entire length and width of the building, with the pavilion system of Messrs. Vaux and Radford; also to cover the corner squares in the same manner, and the remaining squares on each side with a much more simple construction, as has been shown in the design of Messrs. H. A. & J. P. Sims, and to extend the building, if found necessary by increased demand for space, by continuing this simpler roof out to the ends of the projections. The building will then, with the extensions and projections, cover 44.5 acres.

It will be noticed from the above that the principal part of the design is made up of vaulted or domed pavilions, each 140 feet in diameter, clustered together, and connected by arches of 100 feet opening, with interior courts of 36 feet diameter. These dimensions are open to modification and change when working up the final drawings, which can be done, if advisable, without changing the characteristic features of the design.

The principal part of the building thus covered by these pavilions



becomes one spacious hall 408 feet wide and 2,040 feet long, with a transept 408 feet wide and 952 feet long. The vistas of course extend to 952 and 2,040 feet in length. The building is capable of both central and intermediate points of emphasis, direct lines of transit throughout its entire length and breadth, diagonal lines of communication, if deemed necessary, and especially an entire relief from any appearance of contraction, because the visitor will be always in an apartment or pavilion 140 feet wide, that opens immediately into other apartments of the same width.

The committee is of the undoubted opinion that the interior effect from such a building can be made more impressive than that obtained from any exhibition building erected up to this time. As, however, it will be necessary to materially alter the drawings sent in by the architects, in order to meet the requirements of the new design, it is not possible to give the public at present the exact and particular elevations of the pavilion as described; but, with a view to show the main points of the proposed general arrangement of the Exhibition and location of the various buildings and approaches, a preliminary ground plan has been prepared, and is herewith submitted.

The most novel feature of the arrangement, and that which follows in direct consequence of the clustering of the pavilions, will be the interior open courts. While these may be considered as essential features with regard to light, ventilation, drainage, and sanitary arrangements, they admit of being made exceedingly attractive as fountain courts, orchestral stands, points for meeting and observation, and places where the visitor may rest during his examination of the Exhibition. From the fact that these courts are numerous, and located in all parts of the building, it is thought that in many cases they will be treated in a characteristic manner by the foreign commission, whose department is adjoining.

Offices for the various commissions, restaurants, and buffets for light refreshments, and retiring-rooms, it is proposed to locate in the exterior pavilions; also to introduce narrow galleries for observation around each of the interior courts and in the gables of the exterior pavilions. A covered piazza surrounds the entire pavilion, giving access to and communication between all the entrances.

The parallelogram is of such proportions, viz., 680 feet by 2,040 feet, with capacity for extension to 952 feet by 2,040 feet, that it will enable the commissioners to carry out the system of classification adopted.

The most desirable materials to be used in the construction of this building are iron for the main arches, slate, galvanized iron, or tin for the roof-covering, and brick for the gables. Such a construction would inspire full confidence in the safety and protection afforded by the building. It would also admit of rapid manufacture and easy erection, and could be so designed as to allow the arches, the roof-coverings, and the bricks to realize eventually a fair market price.

Another method would be to construct the arches of iron to the height of fifty feet from the ground, to cover the roof with galvanized iron, and to make the remainder of the arches and the gables of wood. It is estimated that the Grand Pavilion can be built in this manner for \$3,580,000. The committee has decided that any method of construction less durable than this will not answer.

The Grand Pavilion will be amply provided with exits and entrances in every direction, and will be so located that by using the present park drives as far as possible, it may have a near approach for vehicles on all sides. The principal entrance will be from the east side, and a



large concourse with covered way surrounding it will be located at that end of the Grand Pavilion. This concourse will afford great facilities for the arrival and departure of the public in all kinds of weather, and it is hoped will obviate some of the annoying experiences of visitors to some of the European exhibitions.

It is intended to introduce railway tracks into the Exhibition grounds, a short distance west of the crossing of Belmont and Elm avenues. By means of turn-outs, it will be possible to convey building material and other freight directly into the Grand Pavilion, the machinery hall, the agricultural hall, and to the site for the art gallery (memorial hall.)

For the purpose of showing the general arrangement of the Exhibition, and the relative sides, positions, &c., of the different buildings, a preliminary ground-plan is submitted with this report, together with the drawings and model of Messrs. Vaux & Radford, which serve to illustrate the pavilion system of building, and those of Messrs. H. A. & J. P. Sims, which illustrate their idea which has been embodied. Also, the four sets of plans of the successful competitors, together with the other plans submitted in the final competition, which are now the property of the Centennial Commission.

There are many considerations of the greatest importance connected with these Exhibition buildings which the committee has deliberated upon, but not referred to in this report, for the reason that they are of such a nature as to require decision at a later day.

After a most careful, thorough, and laborious examination of all the designs submitted, it is a source of much gratification to be able to present at this time, for your approval, a plan for the general arrangement of the Exhibition. It is not only feasible to execute, within the time allotted, at a cost which the occasion will warrant, but also shows a comprehensive and easily understood system for the Exhibition. It also introduces several novel features, particularly in providing for the comfort and convenience of exhibitors and visitors.

The magnitude of the buildings, and the arrangement of the avenues of communication, will be found well adapted to any popular demonstration which may take place in connection with the Exhibition during the centennial year.

#### MEMORIAL HALL.

At the date of the issue of the specifications for the first competition April 1, 1873, it was understood by the committee that appropriations of a million and a half had been or would be made by the State of Pennsylvania and the City of Philadelphia, for the erection of a "Memorial Hall," under the direction of the Centennial Commission, which should be used for the purposes of the International Exhibition during 1876.

The act of the general assembly of the State of Pennsylvania, approved March 27, 1873, provided that the sum of one million of dollars should be appropriated "for the erection of a permanent Centennial building in Fairmount Park, which shall remain perpetually as the property of the people of this Commonwealth, for their improvement and enjoyment," &c., &c., &c. This appropriation was conditioned on a further appropriation of five hundred thousand dollars, by the City of Philadelphia, for the same purpose and for the same building.

The select and common councils of said City, by ordinance dated February 22, 1873, being prior to the approval of the act of the State, "pledges its faith to apply five hundred thousand dollars, and hereby appropriates the same as hereinafter provided, toward the erection of buildings in Fairmount Park for the National Exhibition," &c.



The act of the general assembly further provides for the appointment of a board of "State Centennial Supervisors, who shall, in addition to the powers and duties hereinbefore prescribed, formally approve the design, plans, and specifications for said permanent Centennial buildings, and report the same, with their approval, to the Governor; and they shall formally approve any contract or contracts for the erection of said buildings, and for materials for the same, and also report such contract or contracts, with their approval, to the Governor," &c.

By a comparison of the terms and conditions of the acts referred to, they will be found singularly and evidently incompatible. The committee now entertains grave doubts as to whether the Centennial Commission has, or was ever intended to have, any supervision over the plans or construction of the "permanent Centennial Exposition building," or any interest in the manner of the expenditure of the appropriations made by the State and City, or of the contracts pertaining thereto. It is, therefore, deemed inexpedient to make a specific recommendation for the adoption of a plan for the building contemplated by the provisions of said acts. But the committee is of the opinion that the nine plans submitted under the second competition for a memorial building should be transferred to the said "State Centennial Supervisors," together with such other information relative thereto as may be in the possession of the Commission, for their consideration, with the suggestion that, if they approve a plan and locate the building with reference to the use of the same for the art department of the International Exhibition, it should, as nearly as possible, conform to the general plan indicated in this report.

The necessity for immediate action on the part of the State Centennial Supervisors is so apparent and urgent, that the committee expresses an earnest desire that their decision should be announced as early as possible. If the representatives of the State and City conclude that they will not proceed with the construction of the "permanent Centennial Exposition building," as provided in said acts, your committee on plans and architecture will at once prepare and submit a design for an art gallery in accordance with the general system of buildings recommended in this report. Further delay in the adoption of a plan and of the preparations of the details of this building will not only endanger its timely completion, but will also embarrass the rapid construction of the other buildings provided for.

(Signed)

ALFRED T. GOSHORN, Ohio,  
WM. HENRY PARSONS, Texas,  
ORESTES CLEVELAND, New Jersey,  
ASA PACKER, Pennsylvania,  
EZEKIEL A. STRAW, New Hampshire,  
JAMES E. DEXTER, District Columbia,  
ROBERT H. LAMBORN, Wyoming,

*Committee on Plans and Architecture.*

---

## INTERNATIONAL EXHIBITION, 1876.

OFFICE OF THE UNITED STATES CENTENNIAL COMMISSION,

*Philadelphia, May 2, 1873.*

DEAR SIR: On behalf of Professor W. P. Blake, chairman of the committee on classification, who is absent collecting at Vienna important



data concerning the International Exposition about to be opened there, I inclose an advance copy of the classification of objects and subjects embraced in the programme of the International Exhibition to be held at Philadelphia in 1876, as the prominent feature of the national commemoration of the Centennial Anniversary of the Independence of the United States.

Professor Blake earnestly desires the advantage of your critical suggestions as to any amendments tending to perfect the enumeration of classes, more especially in Department II, Group 28, and Department V, Group 59.

Please enter any amendments on the margin, or on paper fastened to the margin, and return at the earliest date at which it may be convenient for you to confer this kind favor upon Professor Blake, the public, and your very obedient servant,

H. D. J. PRATT.

Maj. Gen. A. B. DYER,

*Chief of Ordnance, War Department, Washington, D. C.*

[For reply to above by Colonel Lyford, of Ordnance Office, see *ante*, page 17.]

Letters to the same effect as the above were addressed by Mr. Pratt to many persons supposed to be informed in regard to the subject of the classification.

---

DEPARTMENT OF STATE,  
*Washington, D. C., November 19, 1873.*

SIR: I have the honor to inclose herewith an original letter of the 12th instant, and its accompaniments, from Mr. A. T. Goshorn, director-general of the United States Centennial Commission, suggesting that there be prepared by the Executive Departments, for exhibition at the Centennial, a statement showing the progress of each Department, its organization and method of transacting business from its origin, the same to be accompanied by specimen pages of all forms of books of record or accounts and blanks that may have been used in such Department or offices under its control, and that it embrace all objects or articles produced by, or under the direction of, the Department, &c.

I will thank you for an expression of your views in regard to the suggestion of Mr. Goshorn, and for the return of his letter and its accompaniments with your reply.

I have the honor to be, sir, your obedient servant,

HAMILTON FISH.

The Hon. WILLIAM W. BELKNAP,

*Secretary of War.*

[For inclosure mentioned in the above, Mr. Goshorn to Mr. Fish, see *ante*, page 17.]

---

WAR DEPARTMENT,  
*Washington, D. C., November 25, 1873.*

SIR: I have the honor to acknowledge receipt of your letter of 19th instant, inclosing a letter of the director-general of the International Exhibition of 1876, proposing (in view of suggestions made by the Chief of Ordnance of this Department of July 19th last) the collective exhibition in 1876 of all the Departments and branches of the National Government—to embrace a historical statement of the progress



of each Department from its origin, the methods of transacting business in each, and an array of all objects or articles produced by or under the direction of each, and suggesting an early conference between officers to be appointed by the President and the Centennial Commissioners, to consider the details of such an exhibition.

You ask me for an expression of views upon the plan proposed by the Commissioners; in reply to which I have the honor to state that I fully concur with the Commissioners upon the general subject of exhibiting the origin and development of all the Government Departments, and a display of the articles or products appropriate to each, illustrating the civic and military functions and administration of our National Government and its resources as a war-power.

This Department will lend all the aid at its command in furtherance of the proposed plan, should the same meet general concurrence on the part of the several Executive Departments, and would suggest the appointment of an officer from each of the Executive Departments, to have full control and supervision of the interests of said Department.

The exercise of the civic functions of the War Department could be well illustrated by the works of the Engineer Corps in the system of internal improvements, surveys, and explorations carried on under their supervision throughout the country.

The main exhibition on the part of the Department, however, must, of necessity, be of a military or warlike nature. The various Bureaus could make a very large and creditable display of their respective materials of war, which, in connection with like materials contributed from other private or national sources, would probably need a separate building for exhibition, or at least a large ground-area in the main building. The Engineers could exhibit the system of fortifications, permanent and temporary, of military mining, pontoons, torpedo-defenses, &c. The Ordnance could readily exhibit, among other industries, the manufacture of our breech-loading small-arms and the ammunition for the same, (and for this purpose would require ample motive-power;) could show the character of our sea-coast armament and our system of field-artillery; and, in general, all that is necessary for the service of our national troops. The Medical Department could exhibit military-hospital administration, medicine, surgery, and hygiene, and interesting researches in microscopical analysis and photo-microscopical illustrations, &c. The Quartermaster's Department could contribute specimens of military clothing, camp and garrison equipage, baggage-wagons, and military vehicles, plans of barracks, quarters, &c., &c. The Signal Service, the systems of military-telegraphy and storm-signals, and the barometrical, telegraphic, and other apparatus incident to the working of that branch of the service. In fine, this Department could exhibit all that is necessary for the thorough arming and equipping of the nation in the exigency of offensive or defensive war, and the placing it in the field as a first-class military power.

I return the letter of Mr. Goshorn, and its accompaniments, as requested.

Very respectfully, your obedient servant,

WM. W. BELKNAP,  
*Secretary of War.*

The Honorable the SECRETARY OF STATE.





# INDEX.

## A.

	Page.
Abbot, Dr., of New Jersey, communication from, relative to a collection of American prehistoric relics..	90
Abstract of reports of the executive commissioner.....	90
Academy of Design, resolution relative to co-operation of.....	64
Music, Philadelphia, grand mass-meeting at, to stimulate subscriptions .....	93
Acceptance of invitation to participate in International Exhibition of 1876—	
by various countries .....	3
the German Empire.....	324
the Netherlands .....	324
Belgium .....	324
Sweden and Norway .....	324
Switzerland.....	324
Mexico .....	324
Ecuador .....	324
Hayti .....	324
Sandwich Islands .....	324
requested previous to March 4, 1874 .....	323
(See also Official acceptance.)	
Access to Fairmount Park, importance of increased facilities for, in 1876 .....	91
to Vienna Exhibition .....	159, 161, 305
Acids derived from minerals, classification of .....	350
Accounts of receipts, &c., of Paris Exposition of 1867 .....	2
Acknowledgment of rules by exhibitors.....	26
Acknowledgments by W. P. Blake, special agent to Vienna Exhibition, to the Director-General Baron von Schwarz-Senborn and others for assistance in the work of his mission.....	109
to various State legislatures .....	69
to the newspaper press .....	69
(See also Resolution of thanks.)	
Act of Congress creating the Commission.....	338
relating to Centennial Celebration .....	338
requirements of.....	2
Acts of Congress relating to custom-house regulations, duties, &c., to be promptly communicated to accredited agents of the several governments co-operating in Exhibition of 1876...	323
relative to the Exhibition of 1876, and creating the Board of Finance.....	340
Active members of Commission, Vienna Exhibition, list of .....	117
Adams, John S., commissioner for Florida.....	337
Additions to by-laws, report on .....	97
Additional committees announced .....	66
department of the classification suggested by the Chief of Ordnance, to include the enginery and material of war .....	18
group in the classification suggested by the Surgeon-General .....	19
space required for the United States in the Vienna Exhibition after the allotment.....	143
subscriptions, action relative to necessity of obtaining.....	33
Address to agents of Commission .....	69
by the Hon. James G. Blaine, Speaker of the House of Representatives .....	29
of F. A. P. Barnard, president of Columbia College, at opening of American Institute Exhibition.	330
President Hawley .....	27, 55
the Hon. George M. Robeson, Secretary of the Navy, on behalf of President Grant .....	322
by the Hon. William Bigler.....	38
the Hon. Daniel M. Fox.....	39
William Henry Parsons .....	39
Mr. Joseph Patterson.....	40
A. J. Dufur.....	40
Mr. H. Ewing .....	40
E. A. Straw .....	40
Mr. John Edgar Thomson .....	40
Mr. William V. McKean .....	40
the Hon. Samuel J. Randall.....	40
Mr. John Welsh.....	40
John V. L. Pruyn.....	41
of the Hon. William D. Kelley.....	50
to the clergy, &c., number of copies distributed.....	92
teachers, &c., number of copies distributed.....	92
Governors, &c., number of copies distributed.....	92
industrial, commercial, and scientific associations, number of copies distributed.....	92
the officers of the General Government and of the governments of the several States .....	81
the clergy and religious associations.....	78, 79, 80
people of the United States .....	77-92
Addresses to the people of the United States, executive committee directed to issue.....	66
people of the United States, issued.....	69
clergy and religious associations, referred to .....	69
teachers, &c., referred to .....	69
officers of the General and State governments.....	69

	Page.
Addresses to scientific, industrial, and commercial organizations .....	69
of packages, regulating relations to .....	24
(See also Labels.)	
issued by executive committee .....	69
to various associations and professions, number of, distributed .....	92
Admission and entrance fees, power to fix, vested in Commission.—Report of conference committee...	101
Administration of the general business of the Commission .....	2
of finances, Vienna Exhibition, imperial decree upon .....	126
of Vienna Exhibition, report upon .....	109
Admission-fees in exhibitions .....	275
importance of fixing, at a low rate .....	327
Admission to Vienna Exhibition, change in rates of .....	216
price of, as affecting attendance .....	221
Advantages claimed for the Exhibition of 1876 .....	325
of the plan adopted, remarks on .....	15
Advertising, &c., of the Commission .....	93
for plans, action relative to .....	29
(See also Committee on plans, &c.)	
Advisory and supervisory powers of the Commission relative to Board of Finance, remarks relative to.	70
Agencies of the Commission abroad, communications relative to the establishment of, referred to the executive committee .....	91
Agent. See Special agent.	
Agents of Board of Finance, how far to regard the quota allotted each State .....	77
communications to, from chairman of executive committee, relative to subscriptions .....	83
Agents and employés of the Commission .....	98
power of executive committee relative to .....	59, 98
by-law relative to .....	98
Agents of exhibitors, regulation concerning .....	24, 25
to receive goods, unpack, &c. ....	24
Agents to receive subscriptions, appointment of .....	92
correspondence with, &c. ....	92
number of .....	92
of the Commission at the Vienna International Exhibition, valuable information obtained by ..	2
reports of .....	2
Agricultural department of Exhibition, offers to co-operate in .....	90
resources, industries, and implements to be a prominent feature of the Exhibition .....	5
products used chiefly for food, classification of .....	345
machines, &c., at Vienna Exhibition .....	116
classification of .....	355
societies, offers of co-operation from .....	5
hall, proposed size of .....	373
buildings, Vienna Exhibition, table showing area in acres of .....	303
remarks relative to .....	146
engineering, classification of .....	362
Agriculture and live stock, committee on .....	336
Agriculture, Department of, included in Executive Order relative to a representation of the Depart-	
ments in the Exhibition .....	21
Agriculture, horticulture, forestry, place in classification of Vienna Exhibition .....	165
See Committee on agriculture.	
Alimentary industry, classification of machines, tools, and apparatus used in .....	355
Allen, Benjamin F., elected director of Board of Finance .....	89
Allotment of space in international exhibitions generally .....	140
importance of .....	140
at Vienna .....	140
at Paris Exhibition of 1867 .....	141
Alternate commissioner for Indiana, action relative to credentials of F. C. Johnson as .....	29
report of committee on credentials relative to .....	36
commissioner of Maine, Charles P. Kimball recognized as .....	35
secretary directed to notify governors of vacancies in office of .....	56
commissioners, provision of act of Congress relative to .....	339
powers and duties of, &c. ....	343
Amateurs' exhibition, place of, in the classification of Vienna Exhibition .....	167
American artists, interest felt by, in the Exhibition .....	5
contributions to the industries of the world, as stated by President F. A. P. Barnard .....	330
Medical Association, resolution asking its co-operation with Commission .....	44
republics, area of surface assigned to, in Paris Exhibition of 1867 .....	136
Amended by-laws, adoption of .....	62
rules relative to subscriptions referred to .....	83
Amendment of regulations, provision for .....	26
of by-laws as reported .....	50, 51, 53, 54
of report of executive committee .....	34
to rules for organization of Board of Finance .....	69
Amendments to by-laws, provision for .....	2, 31, 61
to system of notation of the classification .....	31
American Department of Vienna Exhibition, remarks relative to catalogue of .....	202
Ammonia, classification of .....	350
Analysis of the classification .....	6
and generalization, opportunities for, afforded by the scheme of classification adopted .....	80
Annexes to the Exhibition building .....	373
Vienna Exhibition, table showing area of .....	134
Animals, classification of .....	348
Animal extracts and compounds used chiefly for food, classification of .....	349
fibrous substances used in the arts, classification of .....	347
products used as food or as the basis of manufactures, exclusive of aquatic products .....	348
Annual meetings of the Commission, by law, relative to .....	61
Annular spaces in the building at Paris Exhibition of 1867, breadth, &c. ....	141
Apparatus for capturing and preserving fish, exhibition of .....	5



	Page.
Apparatus for destruction of life, for hunting, trapping, fishing, &c.....	356
and methods for the increase and diffusion of knowledge.....	358
Apparel, classification of.....	352
costumes, &c., place in the classification.....	6
Appleton, William H., elected director of Board of Finance.....	89
notification of election of, as second vice-president Centennial Board of Finance.....	35
Applications for space at International Exhibition of 1876 to be made previous to March 4, 1875.....	323
Appointment of Commissioners, how made.....	22
Appropriation by Congress to the Exhibition, letter from the Commissioners for New York urging.....	331
necessity for.....	4
considered necessary by the Director-General.....	12
by Pennsylvania and Philadelphia for memorial building of International Exhibition of 1876.....	325
of \$50,000, &c., by City of Philadelphia to the Commission.....	68, 92
made by City of Philadelphia, how expended.....	91, 92, 93
manner of disbursement, &c.....	93
from State of Pennsylvania, efforts to obtain.....	68
by State of Pennsylvania, letter to Governor Hartranft relative to.....	69
by the French government and the City of Paris to the Paris Exposition of 1867.....	3
by governments for international expositions, remarks on.....	2
by Pennsylvania and Philadelphia for International Exhibition of 1876, amount of....	325
made by various countries for Vienna Exhibition.....	128
made for Vienna Exhibition by—	
German Empire.....	128
France.....	128
England.....	128
Italy.....	128
Japan.....	128
Turkey.....	128
Egypt.....	128
United States.....	128
Belgium.....	128
Greece.....	128
Russia.....	128
Brazil.....	128
China.....	128
Aquatic life, classification of.....	348
Arboriculture, classification of.....	346
Architectural and civil engineering, place in classification of Vienna Exhibition.....	167
designs and models, classification of.....	364
Architecture, <i>See</i> Plans and architecture; Committee on plans and architecture, &c.	
Vienna Exhibition, committee on.....	115
classification of.....	362, 363
place in the classification.....	6
Architects of the proposed buildings.....	11
bureau of Vienna Exhibition, remarks relative to.....	119
engaged in the erection of the trophies in the hall of the distribution of prizes of Paris Exhibition of 1867, number of.....	124
Architecture and plans of Exhibition of 1876, report of committee on.....	369
Archives and correspondence of Vienna Exhibition, remarks relative to.....	122, 123
Area of chief buildings at Vienna Exhibition.....	134
of the Exhibition buildings.....	12
of exhibition and apportionment of space at Vienna Exhibition.....	130
of ground inclosed for Vienna Exhibition.....	131
of industrial palace, Vienna Exhibition, table of.....	133
of machinery hall, Vienna Exhibition.....	134
of surface assigned to each country in the Champ de Mars, Paris Exhibition of 1867.....	136
Areas assigned to different parts of Paris Exhibition of 1867.....	135
Arizona, amendment of report of executive committee relative to.....	34
Aromatic substances of vegetable growth, classification of.....	347
vinegars, classification of.....	351
Arrangement of articles of exhibition, importance of subordinating the buildings to a well-considered system of.....	178
advantages and practicability of the dual system of, by class and by country.....	314
for division of space Vienna Exhibition, committee on.....	115
of objects in Vienna Exhibition, entirely geographical.....	169
disadvantages of.....	169, 170
Art and manufactures of Italy, anticipated display of, in the Exhibition.....	4
and industry, works of, place in classification.....	368
exhibitions of, committee on, Vienna Exhibition.....	117
associations, offers of co-operation from.....	5
exhibition at Vienna, arrangement and rules of.....	183
gallery of Exhibition of 1876, description of the proposed.....	16
resolution relative to enlisting co-operation of National Academy of Design in preparing plans for.....	64
proposed, size of.....	373
specifications for plans for.....	96
industrial museum in Cölu.....	278
of the present time Vienna Exhibition, section on.....	117
Arts and sciences, committee on.....	336
classification of materials and manufactures used in the.....	349
( <i>See also</i> Committee on Arts and Sciences.)	
Articles excluded from the Exhibition.....	25, 183
exhibited, forwarding of.....	24
regulations relative to photographs, &c, of.....	25
at Vienna Exhibition, information concerning, allowed to be annexed.....	168
intended for exhibition at International Exhibition of 1876. to secure proper position and classification, to be in Philadelphia on or before January 1, 1876.....	323



	Page.
Artificial flowers, classification of .....	353
stone, classification of .....	351
Assets of the Board of Finance remaining after close of the exhibition to be divided among the stock-holders .....	342
Associations assisting the Commission in the work, co-operation and harmony of.....	62
manifestation of sympathy by.....	5
Atwood, David, elected chairman of committee on education.....	66
elected vice-president of Commission .....	55
vice-president of the Commission .....	335
Austria, expenditure of, at Paris Exhibition of 1867.....	128
history of industries of, description of, and remarks upon importance of.....	203
area of ground allotted to, at Vienna .....	134
Austrian railroads, table showing increase of passengers and freights of from January to June, 1873, over same period for 1872.....	156, 157
Austro-Hungarian Empire, anticipation of a conspicuous representation of.....	4
Authors and editors of the reports of the jury of Paris Exhibition of 1867, number of.....	124
Awards at international exhibitions, weight and value of .....	243
organization of juries of .....	243
nature of.....	243
at Vienna Exhibition, official list of .....	245
for plans.....	372
of international jury at Vienna Exhibition.....	229
of premiums, &c., to be made by the Commission.....	342
Awards of premiums to exhibitors reserved to the Commission .....	71
Awards of prizes, medals, &c., at international exhibitions discussed by N. M. Beckwith.....	329
remarks relative to .....	239
number of at Paris Exhibition of 1867.....	240
number of at Vienna Exhibition of 1873 .....	240
table showing number of, distributed to various nations at Vienna Exhibition.....	240
to the exhibitors from each country at Vienna Exhibition.....	241
in art department, Vienna Exhibition .....	241
<b>B.</b>	
Banks throughout the country empowered to receive subscriptions to International Exhibition of 1876, and supplied with books and forms.....	325
Baird, Professor S. F., appointment of, by the Smithsonian Institution upon the board of management of the collective exhibition by the Executive Departments, &c.....	369
Barbour, John S., elected director of Board of Finance .....	89
Barnard, F. A. P., president of Columbia College, address of, at American Institute Exhibition, on American industries .....	330
Beauty of great exhibitions.....	276
Beckwith, the Hon. N. M., United States commissioner-general to the Paris Exposition of 1867, remarks of, on the system of awards at great exhibitions .....	243
letter of, to the American minister at Paris relative to the benefits of international exhibitions.....	329
statement by, of the benefits resulting from international exhibitions.....	329
letter from, to the senators and representatives of New York, urging a congressional appropriation to the Exhibition of 1876.....	331
Belgium officially accepts invitation to participate in the Exhibition .....	3, 324
appropriation by, to secure representation in Vienna Exhibition.....	128
table showing area of ground allotted to, at Vienna Exhibition .....	134
Belmont reservoir, Philadelphia, pumping and storage capacity of.....	290
Benevolence, group in classification assigned to.....	366
Benefits of international exhibitions .....	273, 327
to be derived from the Exhibition, remarks concerning .....	6
stated by the President of the United States .....	1
Béton, classification of.....	351
Biddle, Clement M., elected director of Board of Finance.....	89
Bigler, the Hon. William, unanimously elected president of stockholders' meeting.....	86
address of .....	38, 86
Bills of the Commission—how paid.....	93
Bismarck, Prince, chancellor of the German Empire, recommends participation in the exhibition to the German Parliament .....	3
Black powder, classification of.....	352
Blacking, classification of.....	351
Blaine, the Hon. James G., Speaker of the United States House of Representatives, address by .....	29
courtesies extended to .....	29
Blake, W. P., special agent to Vienna Exhibition, report of.....	2, 109
instructions of .....	69
resolution of thanks to.....	58
report of, as executive commissioner, completed by H. D. J. Pratt.....	69, 89
read and referred to executive committee .....	29, 63
table of contents of report of.....	110
letter from, transmitting report on the organization, administration, and results of the Vienna Exhibition .....	109
presented to the Emperor and Empress of Austria, as representing the Commission.....	270
efforts to give publicity to the work of the Commission abroad.....	270
statement by, of the general sentiment abroad as to the International Exhibition of 1876.....	269
remarks relative to organization of Paris Exhibition of 1867.....	123, 124
(See, also, Special Agent to Vienna Exhibition; Vienna Exhibition of 1873, Report Executive Commissioner, &c.	
Bleaching-powders, classification of .....	350
Blind, international congress, at Vienna, of teachers and managers of institutions for .....	248
Board designated by the President to secure a representation of the several Departments of Government in the Exhibition.....	21



	Page.
Board of direction, by law relative to, as reported from the committee on hy-laws .....	100
Finance. <i>See</i> Centennial Board of Finance,	
officers of .....	337
Supervisors of Pennsylvania, resolution of thanks to .....	62
invited to meet the Commission .....	35
introduction of, to Commission .....	38
resolution inviting members to seats in Commission .....	45
Board to supervise the preparation, &c., of a collective exhibition by the Executive Departments, the	
Department of Agriculture, and the Smithsonian Institution, ordered by the President.....	368
members of, announced, and Col. S. C. Lyford, U. S. A., appointed chairman.....	369
Boats or vessels designed for special purposes.....	358
Boiler-houses, Vienna Exhibition, cost of .....	149
Bolts, classification of .....	354
Bonded warehouse, Exhibition building to be made .....	91
Vienna Exhibition made.....	183
Bonnets, classification of .....	353
Book-making machines and apparatus, classification of .....	355
Books of subscription, rule relative to .....	75
appropriation of \$50,000, by City of Philadelphia, to enable the Commission to	
open.....	92
and documents of the Commission.....	61
and plans relative to Paris Exhibition of 1867, list of, accompanying report of Henry Pettit.....	302
and forms for subscriptions supplied to national banks throughout the country .....	325
and drawings, list of, relative to London Exhibition of 1851, accompanying report of Henry Pettit	
.....	297
Book-store, Vienna Exhibition.....	188
Boots and shoes, classification of .....	353
Bossi, of Milan, fine effect of painted canvas prepared by, in the decoration of the Vienna Exhibition..	287
Boteler, Alexander R., member of executive committee .....	336
elected to executive committee .....	56
Boxes, remarks upon importance of storing of, during Exhibition .....	292
Boyd, D. M., jr., elected secretary of committee on tariffs and transportation.....	66
Brazil, appropriation by, to secure representation in Vienna Exhibition.....	128
Brewers, international congress of, at Vienna Exhibition .....	248
Brewster, Sir David, opinion of, as to the educational influence of London Exhibition of 1851.....	80
British catalogue of Vienna Exhibition, remarks relative to .....	202
Buildings, architecture, &c., Vienna Exhibition, committee on.....	115
classification of decoration and furnishing of interiors of .....	364
for the Exhibition of 1876, area .....	12
to be erected by the Board of Finance.....	70
short time remaining for the erection of.....	7
appropriation by City of Philadelphia toward erection of .....	68
report relative to .....	29
suggestion as to time within which they should be finished.....	145
application for space within, must be made previous to March 4,	
1875 .....	323
full diagrams of, to be furnished to the commissioners of the dif-	
ferent nations which accept the invitation to participate.....	323
regulations relative to competition for plans of.....	370
list of competitors for plans of.....	370
list of .....	373
to be erected by Board of Finance in accordance with plans adopted	
by the Commission .....	34
considerations presented by Henry Pettit relative to the materials	
and superstructure of.....	317
of New York Exhibition of 1853, area and cost of.....	150
London Exhibition of 1851, time occupied in erecting.....	297
site for.....	297
area of.....	297
materials used in construction of .....	297
table showing quantities of materials used .....	297
cost of .....	297
list of books and drawings accompanying report of Henry Pet-	
tit having reference to .....	297
London Exhibition of 1862, description of.....	298
list of some of the quantities of materials used .....	299
Paris Exhibition of 1855, remarks of Henry Pettit in reference to.....	297
description of .....	297
table showing cost of.....	298
Paris Exhibition of 1867, table showing cost of .....	149, 300
time occupied in erecting.....	300
Vienna Exhibition, remarks on .....	142
cost, convenience, &c., of .....	142
inadequate provision for space in, &c.....	142
progress of construction of .....	143
photographs of .....	143
ornaments in.....	143
want of time allowed for construction of.....	144
capacity of.....	145
defects of.....	145
dustiness of .....	145
heating and ventilation of.....	145
roof of .....	145
force employed in constructing.....	143
style of, materials, decorations, &c.....	286
report of the special agent, Henry Pettit relative to .....	279
summary of space allotted to .....	131, 132
cost of .....	291

	Page.
Buildings of Vienna Exhibition, table showing size of industrial palace and machinery-hall .....	302
table showing area in acres of .....	302, 303
expenditures for .....	126, 127
divided into three classes .....	146
materials used in the construction of .....	146, 150
remarks on industrial palace of .....	147
table showing cost of .....	147
cost per acre of .....	147
total area of industry palace .....	148
table showing dimensions of rotunda compared with some of the largest domes of the world .....	149
cost of rotunda .....	148
cost of boiler-houses at .....	149
remarks on imperial pavilion .....	149
remarks relative to flooring of .....	150
area of .....	134
(See also Vienna Exhibition of 1873; Henry Pettit, &c.)	
Building-stones, classification of .....	344
Bullock, A. D., elected director of the Board of Finance .....	89
Bureau of committee of admission of Paris Exhibition of 1867, number of .....	124
police .....	121
military .....	121
sanitary .....	121
archives and correspondence .....	122
architects and engineers, remarks relative to .....	119
gardening, remarks relative to .....	120
installation, remarks relative to .....	120
publishing, remarks relative to .....	120
translating .....	120
press .....	120
catalogue .....	120
report .....	120
ticket .....	121
finance .....	121
law .....	121
jury .....	121
special or local committee .....	121
inspection .....	121
Buttons, place of, in classification .....	353
By-law relative to payment of moneys .....	61
time of occupying the floor .....	54
vice-presidents .....	60
president of the Commission .....	50, 60
secretaries of departments of the Exhibition .....	54
Director-General, action upon .....	54
amendments o by-laws .....	61
annual meetings .....	61
By-laws, consideration of, resumed .....	59, 61
action relative to .....	31
proceedings relative to the report of the committee on .....	45, 46, 47, 48
as reported from the committee on by-laws .....	99
amendments to .....	54, 55, 56, 60, 61
consideration of .....	50, 53
adoption of, as amended .....	62
relative to the time of occupying the floor .....	62
provision for amendments to .....	61
See Committee on.	
Byrd, William M., elected vice-president of the Commission .....	55
vice-president of Commission .....	335
<b>C.</b>	
Campbell, John L., secretary of the Commission, extracts from a paper by, on the international com- parison involved in the idea of the Exhibition of 1876 .....	333
elected secretary .....	55
asks that the temporary secretary be continued in control of the office for a short time .....	58
Candles, place of, in classification .....	351
Capital stock of Board of Finance. See Centennial Board of Finance ; Subscriptions, &c.	
Capitol at Washington, weight and cost of iron in the dome of .....	303
Caps, place of, in classification .....	353
Card-board, place of, in classification .....	353
Carriage-hire, list of rates of, at Vienna Exhibition .....	161
Carriages, classification of trimmings for .....	353
Carriage-stands, Vienna Exhibition, spaces allotted to .....	133
Cases, provision for storing, at Vienna .....	181
charges for storing .....	182
of goods exhibited, regulations concerning .....	25
Catalogue bureau, Vienna Exhibition, remarks relative to .....	120
of articles exhibited. See Official Catalogue.	
Catalogues of Vienna Exhibition—	
Great Britain, remarks relative to .....	202
American department, remarks relative to .....	202
Russian department, remarks relative to .....	201, 202, 203
Celebration of Independence, Exhibition of 1876 referred to in acts of Congress as .....	326
Cements, classification of .....	351



	Page.
Centennial Board of Finance, efforts of women to secure subscriptions to the stock of, commended . . .	30
invited to seats on the floor of the Commission . . . . .	3
rights and duties of . . . . .	31
action relative to submission of plans for buildings to . . . . .	31
organization of . . . . .	68, 86
nominations for directors, &c. . . . .	87
designs for certificates of stock invited . . . . .	69
rules relative to organization of . . . . .	69
to payment of installments upon stock of . . . . .	69
one million shares of stock of, to be issued . . . . .	77
amount to be paid on subscription to stock of . . . . .	72
communication from, relative to rights and duties of . . . . .	67
subscriptions to stock of, reports from the several States concerning . . . . .	53
invitation from, to visit Fairmount Park . . . . .	55
remarks on work and prospects of . . . . .	70
officers and directors of, remarks as to . . . . .	70
provisions of act of Congress relative to stock of . . . . .	70
considerations leading to the incorporation of . . . . .	72
incorporation of . . . . .	72
names of subscribers to stock of, to appear in the records . . . . .	77
success of women's committee in procuring subscriptions to stock of . . . . .	7
subscriptions to the stock of . . . . .	4, 5, 341
subscriptions to stock of, in Pennsylvania . . . . .	4
organization of . . . . .	70
call for a meeting to elect directors of . . . . .	70
meeting to elect directors of . . . . .	70
duties of directors of . . . . .	70
authorized to issue bonds to amount of its capital stock and secure them by mortgage upon property and income . . . . .	342
United States not to be liable for debt, &c., of . . . . .	342
no member of, to be under any personal liability . . . . .	342
duties of, after the Exhibition in closing up accounts, dividing assets, &c. . . . .	342
communication relative to organization of . . . . .	34
act of Congress relative to . . . . .	340
incorporated, authorized to hold real estate, &c. . . . .	340
authorized to issue stock to amount of ten million dollars . . . . .	341
certificates of stock of, &c. . . . .	341
provision for a meeting of corporators and subscribers of . . . . .	341
board of directors of, &c. . . . .	341
to keep minutes of proceedings, vouchers, accounts, &c. . . . .	341
invited to meet the Commission . . . . .	35
election of directors and officers of . . . . .	341
secretary, treasurer, &c., of . . . . .	341
authorized to make by-laws for its own government . . . . .	341
duties of officers of . . . . .	341
Exhibition buildings to be erected by, in accordance with the plans of the Commission . . . . .	342
officers of . . . . .	337
resolutions relative to necessity of immediate subscriptions to the stock of . . . . .	33
report of the committee on conference relative to . . . . .	101
harmony of, with the Commission, importance of maintaining . . . . .	101
design for certificate of stock to be selected by . . . . .	101
statement of expenses, &c., of . . . . .	92
introduction of, to members of Commission . . . . .	38
resolution relative to . . . . .	64
Commissioners requested to confer with, as to subscriptions . . . . .	65
rule relative to books of subscription to stock of . . . . .	75
directors of, authorized to fill vacancies in their own body . . . . .	88
elected . . . . .	89
resolution of thanks to . . . . .	62
Centennial Celebration. <i>See</i> International Exhibition of 1876.	
Exposition. <i>See</i> International Exhibition of 1876.	
Central and South America, efforts to induce co-operation of the nations of . . . . .	14
Ceramic art, classification of . . . . .	351
importance of securing a representation of products of . . . . .	271
Ceremonics at opening of Exhibition of 1876. <i>See</i> Committee on Opening Ceremonics.	
committee on . . . . .	336
Certificate of subscription, form of . . . . .	76
stock, designs for, invited . . . . .	69, 83
premium for accepted design of . . . . .	83
to be illustrative of the progress of the United States . . . . .	83
<i>See also</i> Stock of Centennial Board of Finance; Centennial Board of Finance, &c.	
design for, to be selected by Board of Finance . . . . .	101
action relative to . . . . .	90
Chairman of Executive Committee, letter from, to Governor of Pennsylvania, relative to a State appro- priation . . . . .	69
the board of management of the collective exhibition by the Executive Departments of the Government, appointment of Col. S. C. Lyford . . . . .	369
committee on tariffs and transportation, O. C. French elected . . . . .	66
finance, Asa Packer elected . . . . .	66
opening services, F. L. Matthews elected . . . . .	66
legislation, R. C. McCormick elected . . . . .	66
manufactures, E. A. Straw, elected . . . . .	66
education, David Atwood elected . . . . .	66
products of the soil, Robert Lowry elected . . . . .	66
Chairs, classification of . . . . .	353
Chamber furniture, classification of . . . . .	354

	Page.
Changes in classification suggested .....	17, 18
in committees .....	67
Charts, maps, and graphic representations .....	359
Chemical apparatus, classification of .....	355
preparations, classification of .....	351
industry, place in the classification of, Vienna Exhibition .....	165
Chief buildings, at Vienna Exhibition, area of .....	134
Chief of Ordnance, suggestions by, relative to the classification .....	17
suggestions as to the enginery and material of war in the Exhibition .....	18
China, appropriation by, to secure representation in Vienna Exhibition .....	128
executive committee requested to take measures to secure a representation of industries, &c., of .....	62
China and Japan, table showing area of grounds allotted to, at Vienna Exhibition .....	134
Chromo-lithography, classification of .....	363
Chronometric apparatus, time-measures of all kinds .....	361
Circular address to the people of the United States .....	77
to the scientific, industrial, and commercial organizations of the United States .....	82
the officers of the General Government and of the governments of the several States .....	81
the clergy and religious associations .....	78, 79, 80
teachers and others .....	80
intending exhibitors as to space required, action relative to .....	65
inviting designs for a certificate of stock .....	83
form of questions to exhibitors at Vienna Exhibition .....	237
letter to United States ministers abroad .....	13
Circulars issued by the executive committee .....	69
printing of, &c. ....	13
Citizens' Centennial Executive Committee of Philadelphia conceive the idea of enlisting women in the work of the Commission .....	70
Citizens' Centennial Finance Committee of Philadelphia, work of .....	68, 91, 92
statement of expenses, &c., of .....	92
conference of executive committee with .....	92
Citizens' Executive Committee. <i>See</i> Citizens' Centennial Executive Committee.	
Citizens of Philadelphia, grand mass-meeting of, under auspices of the executive committee .....	68
beneficial effects of mass-meeting of .....	68
City of Philadelphia. <i>See</i> Philadelphia.	
prompt liberality of .....	68
Civil engineering, classification of .....	362
Classes ; changes in notation of, in the classification .....	30
Classification of objects of exhibition, divisions of .....	23
system of notation of, amended .....	30
changes in notation of .....	30
suggested by Chief of Ordnance .....	17
by the Surgeon-General .....	18
of Vienna Exhibition, action relative to obtaining information of .....	69
comprehensiveness of the system adopted .....	6
of objects of exhibition, analysis of .....	6
division of, into departments, groups, and classes .....	6
the departments of .....	6
of motors and apparatus for the generation and transmission of power, and for lifting and moving fluids .....	356
vehicles and apparatus of transportation upon common roads and accessories thereto .....	357
railways and railway plant .....	357
railway rolling-stock and apparatus .....	357
hoisting and lifting apparatus .....	357
transportation upon suspended cables; aerial and pneumatic transportation .....	357
educational apparatus and methods .....	358
typographic aids to the preservation and dissemination of knowledge .....	358
charts, maps, and graphic representations .....	359
telegraphic instruments and methods .....	359
instruments of precision and apparatus of physical research, experiment, and illustration .....	359
meteorological instruments and apparatus .....	360
education .....	367
institutions, societies, and organizations having for their object the promotion of science .....	367
steamships, steamboats, propellers, and all vessels propelled by steam or other fixed motors .....	357
boats or vessels designed for special purposes .....	358
apparatus and methods for the increase and diffusion of knowledge .....	358
mechanical calculation, indicating, and self-registering apparatus, other than meteorological .....	360
weights, measures, and coins, weighing and metrological apparatus .....	361
chronometric apparatus, time-measures of all kinds .....	361
musical instruments and acoustic apparatus .....	361
co-operative, commercial, and financial insurance associations .....	367
music and the drama .....	368
exhibition of works of art and industry .....	368
boats and sailing-vessels for general purposes .....	357
objects illustrating the efforts of benevolence .....	366
government and law .....	366
religious organizations .....	366
miscellaneous hand-tools, machines, and appliances used in various arts, cutlery, &c. ....	356
instruments and apparatus of medicine and surgery, sanitary apparatus, &c. ....	356, 365
apparatus for destruction of life, for hunting, trapping, fishing, &c. ....	356
plastic and graphic arts .....	363
sculpture .....	363
painting .....	363
line-drawing, engraving, and die-sinking .....	363
chromo-lithography and lithography .....	363



	Page.
Classification of photography.....	364
Industrial designs.....	364
mosaic and inlaid work.....	364
architectural designs and models.....	364
decoration and furnishing interiors of public and private buildings.....	364
landscape gardening.....	364
systems, objects, and apparatus illustrating efforts for the improvement of the physical, intellectual, and moral condition of man.....	365
chairs, tables, parlor and chamber suits, office and library furniture.....	354
table-furniture—glass, china, silver, silver plate, tea and coffee sets, urns, samovars, epergnes.....	354
mirrors, stained and enameled glass, cut and engraved window-glass, and other decorative objects.....	354
apparatus and fixtures for heating, lighting, ventilating, and cooking.....	354
household implements, apparatus, and other articles used in dwellings.....	354
manufactured parts of dwellings.....	354
hardware used in construction, exclusive of tools and implements.....	354
tools, implements, machines, and processes.....	355
committee on.....	336
woven and felted goods of wool and mixtures of wool.....	353
silk and silk fabrics and mixtures in which silk is the predominating material.....	353
knit goods and hosiery, including underwear made of piece-goods.....	353
clothing.....	353
hats, caps, boots and shoes, gloves, mittens, &c.; straw and palm-leaf hats, bonnets, and millinery.....	353
laces, embroideries, and trimmings for clothing, furniture and carriages.....	353
fine jewelry, and metallic or mineral ornaments worn upon the person.....	353
ornaments, artificial flowers, coiffures, buttons, trimmings, fans, umbrellas, sun-shades, walking-canes, and other articles of dress or ornament, exclusive of jewelry.....	353
paper, pasteboard, card-board, wall-papers, paper building-material and for general construction, and paper-industry generally.....	353
furniture and manufactures of general use in construction and in dwellings.....	354
remarks on the all-pervading importance of, to an exhibition.....	165, 178
comparative excellence of, at the various international exhibitions.....	165
criticism of, invited from persons eminent in various professions.....	89, 377
action relative to.....	90
of extracts and compounds of animal or vegetable origin used chiefly for food.....	349
potash, soda, and ammonia; salt, bleaching-powders, fertilizing compounds, mineral acids.....	350
oils, soaps, candles, illuminating and other gases.....	351
cements, artificial stone, concrete, béton.....	351
the ceramic art, terra cotta, faience, porcelain, and glass.....	351
chemical and pharmaceutical preparations.....	351
paints, pigments, dyes, colors, turpentine, oils, varnishes, printing-inks, writing-inks, blacking.....	351
patent medicinal compounds, perfumery, essences, pomades, cosmetics, aromatic vinegars, &c.....	351
explosive and fulminating compounds.....	352
yarns, and woven goods of vegetable or mineral materials.....	352
textile and felted fabrics, apparel, costumes, and ornaments for the person.....	352
yarns and woven goods of vegetable or mineral materials.....	352
and arrangement at Vienna Exhibition.....	165
approximate statement of total number of visitors of Paris Exhibition of 1867.....	225
at Vienna Exhibition, remarks relative to.....	120
summary of.....	343
key to notation of.....	344
of minerals, ores, building-stones, metals, and metallurgical products.....	344
agricultural products used chiefly for food.....	345
arboriculture and floriculture.....	346
forest products.....	346
aromatic, oleaginous, saponaceous, stimulating, and narcotic substances of vegetable growth, vegetable drugs and perfumes.....	347
fibrous substances of vegetable or of animal origin used in the arts.....	347
animals, live stock, &c.....	348
fish and aquatic life and fish products.....	348
animal products used as food or as the basis of manufactures, exclusive of aquatic products.....	348
skins, peltries, furs, and feathers.....	349
preserved meats, vegetables, and fruits.....	349
materials and manufactures used for food, or in the arts, the result of extractive or combining processes.....	349
machines, tools, and apparatus of mining, metallurgy, chemistry, and the extractive arts.....	355
machines, tools, and apparatus of agriculture and forestry and alimentary industry.....	355
machines, tools, and appliances for working wood, metals, or stone.....	355
machines and implements of spinning, weaving, felting, paper-making, sewing, and making clothing and ornamental objects.....	355
machines and apparatus for type-making, type-setting, printing, ruling, stamping, embossing, pressing, and for making books and paper-working.....	355
engineering, public works, architecture, &c.....	362
agricultural engineering.....	362
mining engineering.....	362
civil engineering.....	362
dynamic and industrial engineering.....	363
railway engineering.....	363
public works and architecture.....	363
submarine constructions, foundations, piers, docks, &c.....	363
military engineering.....	363

	Page
Classification of naval engineering .....	363
<i>See</i> Arrangement.	
<i>See</i> Committee on.	
Clergy of the United States, interest of, in the Exhibition .....	78
invited to assist in Exhibition .....	78
Clergy and religious associations of the United States, address to .....	69, 78
address to, number of copies of distributed .....	92
Clerks, employés, &c., of the Commission .....	92
Cleveland, Orestes, elected vice-president of Commission .....	55
member of committee on plans and architecture .....	336
vice-president of the Commission .....	335
Cloak-rooms and parcels-office, Vienna Exhibition .....	189
Closing of International Exhibition of 1876, date of .....	323
Clothing, classification of trimmings for .....	353
classification of .....	353
Coal, collection of specimens of for Exhibition .....	5
Cochran, Thomas, secretary <i>pro tem.</i> Board of Finance, communication from, relative to organization of Board .....	34
notification of appointment of, as temporary secretary of the Board of Finance .....	35
elected director of Board of Finance .....	89
Coiffures, classification of .....	353
Coldwell, Thomas H., vice-president of the Commission .....	335
elected vice-president of the Commission .....	55
Collection of objects illustrating the fisheries of the world to be exhibited .....	5
Collection of metals and minerals of the United States .....	5
Collective exhibition by the Executive Departments of the General Government, Department of Agriculture, and the Smithsonian Institution, proposal relative to .....	12
action of the President relative to .....	12
correspondence between the Secretary of State and the Secretary of War relative to .....	378
Colleges of the United States, address to officers and teachers of .....	69, 80
Collins & Autenrieth, authors of the accepted plan for memorial building .....	11
awarded first premium for designs offered .....	372
Color for labels of packages from foreign countries .....	24
Colors, classification of .....	351
Commemorative medals, communication relative to, from Hon. H. R. Linderman, Director United States Mint .....	34
subject of referred to committee on legislation .....	34
Commerce, committee on .....	336
<i>See</i> Committee on commerce and fisheries, &c.	
Commercial organizations, addresses to .....	69, 92
Commission of Paris Exhibition of 1867, number of committees of .....	124
Vienna Exhibition, committees of, remarks on .....	117
working organization of .....	115
Commissions, Vienna Exhibition. <i>See</i> Foreign commissions.	
of Paris Exhibition of 1867, upon the history of labor, number of .....	124
for the exposition of agriculture, number of .....	124
horticultural exposition, number of .....	124
arboricultural exposition, number of .....	124
encouraging study by workmen, number of .....	124
Commissioner for Delaware, death of .....	33
of Ecuador, to Exhibition of 1876, presents his credentials at Philadelphia .....	324
secretary directed to notify governors of vacancies in office of .....	56
for Pennsylvania, letter of, to the Governor of that State, urging a State appropriation .....	84
alternate, from Indiana, report of committee on credentials relative to .....	36
Commissioners, mode of appointment .....	22
requested to secure the co-operation of women in their respective States .....	70
number of, present at each session of the Commission .....	71
for Tennessee, vote of thanks to .....	53
of foreign countries, Paris Exhibition of 1867, number of .....	124
for New York, letter of, to the Senators and Representatives of that State, urging an appropriation by Congress to the Exhibition of 1876 .....	331
of Paris Exhibition of 1867, number of .....	124
appointment of, confirmed .....	343
to conduct Exhibition of 1876 provided for .....	339
time within which to be appointed .....	339
to be nominated by the several Governors and appointed by the President .....	339
place of meeting of .....	339
duties of .....	339
secretary directed to obtain information relative to .....	58
of Fairmount Park, conference with and communications from, relative to the grounds selected for the Exhibition .....	95
communications from, regretting inability to attend session of Commission .....	57
requested to communicate with Board of Finance as to subscriptions .....	65
Committee appointed to draught resolutions relative to death of James L. Orr .....	34
of conference of the Commission and Board of Finance, to define the respective rights and duties of the two bodies, report of .....	101
five appointed to wait on ladies' committee, &c. .....	45
appointed to wait on directors Centennial Board of Finance, report of .....	35
conference to define relative rights and duties of Commission and Board of Finance, acceptance of report of .....	31
three appointed to wait on members of Board of Finance and Board of Supervisors, and inform them of invitation to meet the Commission .....	35
women. <i>See</i> Women's Centennial Executive Committee.	
Commissioners of Fairmount Park, conference with .....	68
Citizens' Centennial Finance Committee of Philadelphia, conference with .....	68



	Page.
Committee of councils of Philadelphia, conferences with .....	68
Pennsylvania State Centennial Committee, conference with .....	68
on agriculture and live stock, list of members of .....	64
created .....	66
proceedings relative to .....	66
architecture, buildings, &c., Vienna Exhibition .....	115
arts and sciences, list of members of .....	63
arts and sciences, to be appointed annually .....	54, 61
by-laws, report of .....	97
proceedings relative to report of .....	45 46, 47, 48
consideration of report of, postponed .....	31
classification, list of members of .....	63
action of the chairman of .....	90
instructed as to prominence to be given to industrial interests .....	58
communication relative to a machine for the manufacture of wool re-	
ferred to .....	35
to be appointed annually .....	54, 61
report of, relative to changes in the notation of the classification .....	30
commerce, list of members of .....	64
name of, amended .....	62
W. W. Wood, elected chairman of .....	67
C. H. Marshall, elected secretary of .....	67
and fisheries to be appointed annually .....	54, 61
credentials, report of proceedings in reference to .....	38, 42, 43
proceedings relative to report of .....	35
report relative to Franklin C. Johnson as alternate commissioner from Indiana.	36
report of .....	28
education, David Atwood, of Wisconsin, elected chairman of .....	66
finance, list of members .....	63
Asa Packer, elected chairman of .....	66
J. M. Paul, elected secretary of .....	66
Vienna Exhibition .....	115
and accounts to be appointed annually .....	54
fisheries and fish-culture appointed .....	60
members of .....	67, 336
foreign affairs, resolution relative to international congress for consideration of questions	
of international law, &c., referred to .....	62
resolution relative to an international medical congress in 1876 referred to.	63
list of members .....	63
communication recommending appointment of Col. L. M. Montgomery	
as special agent of the Commission at London .....	35
to be appointed annually .....	54, 61
history, literature, and popular education, list of members of .....	64
to be appointed annually .....	54, 61
horticulture appointed .....	65
made a standing committee .....	66
title of, amended .....	66
and floriculture, members of .....	336
list of members .....	66
legislation, list of members of .....	63
subject of commemorative medal referred to .....	34
to be appointed annually, &c .....	54, 61
R. C. McCormick, elected chairman of .....	66
manufactures, list of members of .....	64
to be appointed annually .....	54, 61
E. A. Straw, elected chairman of .....	66
George A. Crawford, elected secretary of .....	66
mines and mining, list of members of .....	64
to be appointed annually .....	54, 61
nomination of secretaries, list of members of .....	63
duties of, &c .....	61
action of, to be confirmed by executive committee .....	61
resolution relative to, made a by-law .....	54
opening ceremonies, list of members .....	63
to be appointed annually .....	54, 61
F. L. Matthews elected chairman of .....	66
plans and architecture, list of members .....	63
conferences, &c., with commissioners of Fairmount Park relative	
to site for the Exhibition, &c .....	94
apply to the park commission for a transfer of grounds for the	
exhibition .....	94
suggestions as to building in conformity with the topography of	
the ground selected .....	94
requested to procure plans without delay .....	95
report of .....	94, 369
members of .....	336
to be appointed annually .....	54, 61
adoption of report of .....	31
consideration of report of .....	31
resumed .....	31
report relative to the Exhibition buildings, advertising for plans,	
&c .....	29
on products of the soil to be appointed annually, &c .....	54, 61
Robert Lowry elected chairman of .....	66
name of changed .....	66
tariffs and transportation, list of members of .....	63
instructed to arrange facilities for travel, &c., in 1876 .....	58

	Page.
Committee on tariffs and transportation to be appointed annually.....	54, 61
O. C. French elected chairman of.....	66
D. M. Boyd, jr., elected secretary of.....	66
to attend convention of Governors at Atlanta appointed.....	67
<i>(See also Executive committee, committee on, &amp;c.)</i>	
Committees of the commission:	
executive.....	335
on plans and architecture.....	336
tariffs and transportation.....	336
finance.....	336
foreign affairs.....	336
opening ceremonies.....	336
legislation.....	336
classification.....	336
nomination of secretaries of departments.....	336
arts and sciences.....	336
manufactures.....	336
history, literature, and popular education.....	336
commerce.....	336
agriculture and live stock.....	336
mines and mining.....	336
horticulture and floriculture.....	336
fisheries and fish-culture.....	336
named by the President.....	63
as reported by committee on by-laws.....	99
additional names announced.....	66
<i>(See also Special committees.)</i>	
of various bodies, conferences of, with executive committee.....	68
trades and occupations formed to procure subscriptions.....	68
changes in.....	67
officers of.....	66
by-law relative to.....	54, 61
list of.....	54, 61
of Paris Exhibition of 1867:	
admission, number of.....	124
weights, measures, and coins, number of.....	124
on ventilation, number of.....	124
upon exposition of musical works, number of.....	124
yachts, and experiments in salvage, number of.....	124
finance and auditing the accounts, number of.....	124
of department secretaries of Paris Exhibition of 1867, number of.....	124
the imperial commission of Paris Exhibition, number of.....	124
admission bureaus of Paris Exhibition of 1867, number of.....	124
Vienna Exhibition.....	117
Communication of the Director-General to United States ministers abroad.....	13
from the Director-General to the Secretary of State, relative to the collective exhibi-	
tion by the Executive Departments.....	17
Chief of Ordnance.....	17
Surgeon-General.....	18
Quartermaster-General.....	19
Secretary of the Light-House Board.....	20
Secretary of State, inclosing Executive order.....	21
Board of Finance as to the relative rights and duties of the Commission and the	
Board.....	67
to agents relative to rules for subscriptions.....	83
from Hon. H. R. Linderman, Director of United States Mint, relative to commemora-	
tive medals, &c.....	34
S. S. Jones, relative to a machine for the manufacture of wool.....	35
Franklin B. Hough, of New York, relative to the progress made by the United	
States during the past century.....	35
the Secretary of State to the Secretary of War, relative to a collective exhibi-	
tion by the Executive Departments.....	378
commissioners for New York to the Senators and Representatives of that	
State, urging an appropriation by Congress to the Exhibition of 1876.....	331
Centennial Board of Finance, relative to organization.....	34
relative to the Exhibition sent by the Secretary of State to foreign ministers and min-	
isters of the United States abroad.....	323
from Womens' Centennial Executive Committee, relative to meeting.....	45
recommending the appointment of Col. L. M. Montgomery as a special agent of the	
commission at London.....	35
from Henry Pettit, special agent to Vienna Exhibition, presenting his final report.....	295
with Vienna Exhibition, description of and remarks relative to.....	291-293
of William H. Seward, transmitting to Congress the report on the Paris Exhibition of	
1867, extract from.....	328
from Women's Association read and referred to executive committee.....	57
secretary of state of New Hampshire.....	57
the Northern Pacific Railroad proposing to exhibit, &c.....	90
relative to the establishment of agencies abroad referred to the executive committee ..	91
from John L. Shoemaker.....	63
Horace J. Smith, relative to an experimental farm.....	91
Communications relative to the fine-art department of the Exhibition.....	5
from the Commission to the President of the United States, referred to.....	2
relative to the Exhibition presented by Prince Bismarck to the German Parliament,	
with a favorable recommendation.....	3
from Hon. H. R. Linderman, Director of United States Mint.....	34
from the Commissioners of Fairmount Park, relative to the site selected for the Exhi-	
bition.....	95



	Page.
Communications from the chairman of the committee on plans to the Park Commission accepting grounds offered, &c. ....	95, 96
from commissioners regretting inability to attend session of the Commission.....	57
Compactness an essential feature of great exhibitions.....	267
sacrificed at Vienna .....	267
Comparative cost of labor, &c., in the United States and Europe .....	4
system of arrangement of goods exhibited, importance of adhering to .....	266
damage to the Vienna Exhibition from inattention to .....	266
trials, experiments, &c., at Vienna Exhibition .....	168
(See also Systematic arrangement.)	
Comparison between the evidences of our progress in a century and that of other nations declared in act of Congress one of the leading objects of the Exhibition of 1876.....	326
Competitive trials of machines and methods, provision for in Vienna Exhibition .....	168
Competitors for plans of buildings for Exhibition of 1876, list of .....	370
Competition, products may be entered for .....	23
articles entered for exhibition not to be transferred to class devoted to.....	23
for a design for certificate of stock, circular relative to.....	83
for plans of buildings for Exhibition of 1876, regulations relative to.....	370, 371
invited .....	97
to be first unlimited and then limited to the successful participants in the first competition.....	97
Compounds of animal and vegetable origin used chiefly for food, classification of.....	349
Comprehensiveness of the system of classification adopted .....	6
Concessions in the Exhibition, right to grant reserved to the Commission.....	70
Concrete, classification of.....	351
Concurrence of Board of Finance in choosing plans for the buildings, action relative to.....	31
Condition of man, classification of systems, &c., illustrating efforts for the improvement of .....	365
objects illustrating efforts for the improvement of.....	6
Conduct of exhibitors, regulations as to.....	25
Conference committee of the Commission and Board of Finance to define the duties of each.....	31
report of.....	101
committees of various bodies, meetings of executive committee with.....	68
Conferences of the executive committee with committees of various bodies.....	68
with the Park Commission relative to the ground selected for the Exhibition .....	94, 95
Congress of the United States asked to assist the Commission.....	7
necessity of an appropriation by .....	4
message of the President to, transmitting report of the Commission.....	1
acts of, relating to Centennial Celebration .....	338
expectation of the people of action by, relative to the Exhibition of 1876.....	325
for the consideration of questions of international law, resolution relative to .....	62
for consideration of medical matters proposed .....	63
Congresses at Vienna Exhibition for the discussion of various questions, list of .....	248
(See also International Congress.)	
Connecticut, amendment of report of executive committee relative to .....	34
Conservatory in connection with Exhibition of 1876, size of .....	373
necessity for, &c .....	90
communication from Pennsylvania Horticultural Society, &c.....	90
offers of co-operation in establishing, from the Department of Agriculture.....	90
Consideration of by-laws.....	50, 53, 53
Considerations requiring Government aid to the Exhibition.....	3
Construction of buildings at Vienna Exhibition, materials used in .....	146
Contents of the report of W. P. Blake on the organization, administration, and results of the Vienna Exhibition, table of.....	110
Convention appointed to attend Atlanta convention of Governors.....	67
Cooper, Charles W., elected director of Board of Finance.....	89
Cooking apparatus and fixtures, classification of .....	354
Co-operating exhibitors in the exhibition of the history of labor Paris Exhibition of 1867, number of ..	124
Co-operation of women, commissioners requested to secure .....	70
of the several States in the Exhibition, efforts taken to secure .....	69
with the Commission, offers of .....	5
of various auxiliary organizations with the Commission, resolutions relative to .....	62
Co-operative, commercial, and financial insurance associations, classification.....	367
Copies of various addresses, number of, distributed .....	92
of letter of chairman of executive committee to Governor of Pennsylvania, number of, distributed.....	92
Corliss, George H., of Rhode Island, member of executive committee.....	336
elected to executive committee.....	56
Corporators of Board of Finance, meeting of .....	86
(See also Centennial Board of Finance.)	
Correspondence of the Commission to be conducted by secretary, &c .....	61, 99
magnitude of .....	92
with and between the Executive Departments relative to a collective exhibition, &c.....	377
of the committee on plans and architecture with the commissioners of Fairmount Park.....	95
and archives, Vienna Exhibition, remarks relative to .....	122, 123
of Vienna Exhibition, description of and remarks relative to .....	201
and life of George Read, of Delaware, copy presented to Commission.....	34
Correspondents of foreign journals at Vienna Exhibition, remarks relative to .....	207
Cosmetics, classification of.....	351
Cost, &c., of the great exhibitions of the world .....	272
of the Vienna Exhibition, detailed estimates of .....	306
Costumes, classification of .....	352
Councils of Philadelphia, conference of the executive committee with committee of .....	68
Counselor and solicitor of the Commission .....	22, 335
John L. Shoemaker, unanimously elected .....	56
by-law relating to .....	98, 100
provided for .....	98
election of.....	98

	Page.
Courtesies extended to the Hon. William D. Kelley.....	50
Crawford, George A., elected secretary of committee on manufactures .....	66
Credentials, report of committee on .....	28
of F. C. Johnson, action relative to.....	29
committee on, report relative to Franklin C. Johnson as alternate from Indiana.....	36
of commissioner of Ecuador to Exhibition of 1876 presented at Philadelphia.....	324
Creigh, John D., vice-president of the Commission .....	335
elected vice-president of the Commission.....	55
Criticisms on the system of classification adopted .....	17, 18
Culture, appeal to citizens of, to promote the interests of the Exhibition.....	81
Cummins, John, elected director of Board of Finance.....	89
Currency and stock values, international congress at Vienna for consideration of.....	249
Current and incidental expenses of the Commission, appropriation of \$50,000 for by the city of Philadelphia .....	92
Custom-house regulations relative to the Exhibition .....	23
duties, &c., acts of Congress relative to, to be promptly communicated to the accredited representatives of governments co-operating in the Exhibition of 1876.....	323
action relative to .....	91
relative to Vienna Exhibition.....	184
Cut window-glass, classification of.....	354

D.

Dangerous and inflammable substances excluded from Vienna Exhibition.....	183
Danube, regulation of, at Vienna Exhibition, remarks relative to.....	129, 130
Date of opening and closing International Exhibition of 1876 .....	323
Dates of opening and closing the Exhibition.....	22
Death of William T. Read, Commissioner from Delaware .....	33
James L. Orr, action relative to .....	53
appointment of committee to draught resolutions on .....	34
Declaration of Independence at Mecklenburgh, North Carolina, in 1775, reference to.....	73
Decoration and furnishing of interiors of buildings, classification of.....	364
Dedication of Exhibition grounds .....	7
address on behalf of President Grant at.....	322
Definition of the term great exhibition, as given by Dr. Exner.....	273
Delaware, amendment of report of executive committee relative to .....	34
death of William T. Read, commissioner of.....	33
Delivery and removal of goods intended for exhibition .....	23
Denmark, table showing area of ground allotted to, at Vienna Exhibition .....	134
Department of Agriculture, offers of co-operation from.....	5, 90
to be included in a collective exhibition of the Executive Departments of the General Government .....	12, 21
Departments, changes in notation of, in the classification .....	30
committee on nomination of secretaries of .....	337
of the classification .....	6
action relative to secretaries of .....	54
of the General Government to be represented in Exhibition.....	5
proposed collective exhibition by.....	12
Description of Grand Pavilion or main Exhibition building proposed .....	15, 374
the memorial hall.....	16
Descriptive labels, regulations concerning.....	25
Design for certificate of stock invited .....	83
premium for .....	83
requirements relative to .....	83
to be illustrative of the progress of the United States .....	83
for certificate of stock to be selected by Board of Finance.....	101
National Academy of, resolution relative to securing co-operation of .....	64
Designs for buildings for the Exhibition. See Report of committee on plans, &c.	
and models used for architecture, classification of .....	364
invited for certificate of stock .....	69
Dexter, James E., of District of Columbia, member of committee on plans and architecture .....	336
Diagrams of buildings and grounds of International Exhibition of 1876 to be furnished to the commissioners of different nations which shall accept invitation to participate.....	323
Die-sinking, classification of .....	363
Diplomatic agents of the Government. See Ministers of the United States abroad.	
Diplomas of honor at Vienna Exhibition .....	240, 247
Director-general of the Commission, action upon by law relative to.....	54
by law, relative to.....	60
provided for .....	60, 335
mode of election, &c.....	60
proceedings relative to.....	50, 51, 53, 60
circular letter of, to United States ministers in Europe and Asia ..	13
South and Central America, Mexico, and the Antilles..	13
executive committee authorized to elect .....	2
A. T. Goshorn unanimously elected.....	2
proceedings relative to .....	53
article relative to, agreed to.....	52
proposes a collective exhibition by the Executive Departments of the General Government .....	12
report of, list of papers accompanying .....	8
report of .....	11
represents the necessity of early information as to the intentions of foreign governments .....	11
addresses a circular letter to United States ministers abroad .....	11



	Page.
Director-General of the Commission visits the Vienna International Exhibition before entering upon his duties .....	2
enters upon his duties .....	2
work of .....	2
organizes the office of the Commission, prepares regulations, &c., in concert with the executive committee .....	2
of Vienna Exhibition authorized to engage co-operation of the imperial credit institution for commerce and trade .....	113
not required to follow rules laid down for governmental financing .....	113
usual governmental book-keeping regulations and forms to be dispensed with .....	113
required to deliver to minister of the board of trade statement of expenses .....	113
appointment by private imperial letter and decree of privy-counselor Baron William v. Schwarz-Senborn with title of Imperial and Royal General Director .....	117
remarks concerning .....	117-118
Director of United States Mint, communication from, relative to commemorative medals, &c .....	34
Directors of Centennial Board of Finance, reference to minutes of meeting of .....	29
elected by the stockholders .....	70
introduction of, to the Commission .....	38
authorized to fill vacancies in their own body .....	88
elected .....	89
Dispatches received from ministers abroad relative to the Exhibition .....	4
Display of flowers at Vienna Exhibition, remarks relative to .....	146
Division for Hungary, Vienna Exhibition, section on .....	117
of Lower Austria, Vienna Exhibition, remarks relative to .....	116
Docks, classification of .....	363
Documents and books of the Commission, provision as to .....	61
Dome of Capitol at Washington, weight and cost of iron-work in .....	303
the Vienna Exhibition, effect of .....	142
contracted to be erected in nine months .....	303
Drainage and sanitary fittings at Vienna Exhibition, report on .....	195
description of .....	303-304
Drama and music, place in classification .....	368
Drawing of objects in exhibitions .....	275
Drawings and books, list of, accompanying report of Henry Pettit .....	297
Drawings, photographs, &c., or articles exhibited .....	25
Drugs from vegetables, classification of .....	347
Dualin, classification of .....	352
Dufur, A. J., remarks of .....	40
Duration of International Exhibition of 1876 .....	22, 323
Vienna Exhibition, remarks relative to .....	226
Duties and rights of the Commission and Board of Finance. <i>See</i> Centennial Board of Finance, Conference committee, &c.	
Duties, custom-house regulations, &c., acts of Congress relative to, to be promptly communicated to accredited representatives of governments co-operating in Exhibition of 1876 .....	323
of Board of Finance, communication relative to .....	67
the Commission .....	339
executive committee .....	59
the president of the Commission .....	60
the secretary .....	61
secretaries of divisions .....	61
Dwelling-house, place of, in classification of Vienna Exhibition .....	167
Dwellings, classification of household implements, apparatus, and other articles used in .....	354
manufactured parts of .....	354
Dyes, classification of .....	351
Dynamic engineering, classification of .....	363
Dynamite, classification of .....	352

## E.

Earle, James T., of Maryland, member of executive committee .....	335
elected to executive committee .....	56
Eastern nations, measures to secure representation of industries, &c., of, in the Exhibition .....	62
Eaton, Mr. John, appointment of, by the Secretary of the Interior upon the board of management of the collective exhibition by the Executive Departments, &c .....	369
Ecclesiastical arts, place of, in classification of Vienna Exhibition .....	167
Economy practiced in expenditures by the executive committee .....	71
Ecuador, acceptance by, of invitation to participate in International Exhibition of 1876 .....	324
commissioner of, to Exhibition of 1876 presents his credentials at Philadelphia .....	324
officially accepts invitation to participate in the Exhibition .....	3
appointment of a resident commissioner by .....	4
Editors and authors of reports of the jury of the Paris Exhibition of 1867, number of .....	124
Education, group in classification assigned to .....	367
Vienna Exhibition, remarks relative to .....	117
teaching and instruction, place of, in classification of Vienna Exhibition .....	167
popular literature, and history, committee on .....	336
Educational apparatus and methods .....	358
influence of the London Exhibition of 1851, opinion of Dr. Whewell as to .....	80
Efforts for the improvement of the physical, intellectual, and moral condition of man, place in the classification of objects illustrating .....	6
Egypt, appropriation by to secure representation in Vienna Exhibition .....	128, 179
expenditures of, at Paris Exhibition of 1867 .....	128
Election of A. T. Goshorn as Director-General .....	2

	Page.
Election of A. T. Goshorn as Director-General reported by the executive committee .....	67
unanimously confirmed .....	67
of B. H. Haines as secretary of the executive committee .....	67
of officers of the Commission .....	55
by-law relative to .....	46, 59
proceedings relative to .....	45
when to take place .....	59
notice of .....	59
of officers of committees .....	67
officers of the Board of Finance .....	86
executive committee .....	56
vice-presidents of the Commission .....	55
Embossing machines and apparatus, classification of .....	355
Embroideries, classification of .....	353
Employés of the Commission .....	93
powers of the executive committee as to .....	59
executive committee authorized to appoint .....	98
by-law relative to .....	98
to be paid monthly .....	99
Enameled glass, classification of .....	354
Engineering, architectural and civil, place in the classification of Vienna Exhibition .....	167
classification of .....	362
place in the classification of objects relating to .....	6
Engineers' bureau, Vienna Exhibition, remarks relative to .....	119
Enginery of war, place in the classification, suggestions relative to .....	18
England, appropriation by, to secure representation in Vienna Exhibition .....	128
(See also Great Britain.)	
Engraved window-glass, classification of .....	354
Engraving, classification of .....	363
for certificate of stock .....	69
Entrance and admission fees, power to fix, vested in Commission; report of conference committee .....	101
right to regulate, reserved to the Commission .....	70
to be fixed by the Commission .....	342
Epitome of the history of inventions, Vienna Exhibition .....	168
Erection of buildings for the Exhibition of 1876. See also Buildings for the Exhibition; Centennial Board of Finance, &c.	
remarks concerning .....	7
Essences, classification of .....	351
Establishment of agencies abroad, communications relative to, referred to executive committee .....	91
rules governing rates for entrance and admission fees reserved to the Commission .....	70
Estimates of cost accompanying the plans offered by competing architects .....	372
space required, executive committee instructed to obtain .....	65
in the Exhibition by the Quartermaster's Department .....	20
Light-House Board .....	21
Europe, the purposes of the Commission explained by the leading journals of .....	7
European governments, recognition by, of the claims of international exhibitions upon the public treasury .....	3
nations favorably respond to the invitation to take part in the Exhibition .....	12
Ewing, Mr. H., remarks of .....	40
Excluded articles, regulation concerning .....	25
Executive branch of the National Government, action of, relative to Exhibition of 1876 .....	321
business of the Commission, administration of .....	2
commissioner, office of, abolished .....	54, 58
resolution of thanks to .....	58
report of .....	69
completed by H. D. J. Pratt .....	69-89
sent to Vienna as special agent .....	69
committee, acknowledgments of, to various governors, legislatures, &c .....	69
to newspaper press .....	69
circular addresses issued by .....	69
amendment of report of .....	34
authorized to elect a director-general .....	2
election of a director-general by .....	2
authorize committee on plans and architecture to at once proceed to procure suitable plans .....	95
chairman of, authorized to refer current business to committees during recess of Commission .....	60
committees to report to .....	60
papers of to be subject to examination by any member .....	60
communication from Secretary of State of New Hampshire referred to .....	57
conferences of, with committees of various bodies .....	68
directed to issue addresses to the people, &c .....	66
elect A. T. Goshorn, Director-General of the Commission .....	67
B. H. Haines, secretary of the committee .....	67
election of A. T. Goshorn by, confirmed unanimously .....	67
election of .....	56
instructed to deliver subscription-books, &c., to Board of Finance .....	32
issue a call for meeting of stockholders of Board of Finance .....	70
organize the Board of Finance .....	70
letter from the chairman of, to the Governor of Pennsylvania, relative to a State appropriation .....	69
list of .....	335
report of .....	28, 68
accepted .....	29
conference committee submitted by .....	31
William P. Blake referred to .....	63



	Page.
Executive Committee, resolution of instruction to, as to obtaining estimates of space from intending exhibitors .....	65
relative to concurrence of, in the plans for building submitted to .....	32
the Board of Finance in plans referred to .....	32
requested to secure representation of the industries, &c., of China, Japan, &c. ....	62
secure an appropriation from City of Philadelphia .....	68
efforts to obtain an appropriation from State of Pennsylvania .....	68
<i>(See also Citizens' Centennial Executive Committee.)</i>	
send special agents to Vienna .....	69
efforts of, to inform the people of the purposes, &c., of the Commission .....	70
numerous agencies created by .....	70
remarks on the general interest in the Exhibition aroused by .....	70
suggestion of, as to re-organization of the Commission .....	70
extent and result of the labors of .....	71
economy practiced by .....	71
time and mode of election .....	59
quorum of .....	59, 98
officers of .....	59
agents and employes of .....	59
journal of .....	59
rules of .....	59
presentation of reports of .....	59
general powers and duties of .....	59
vacancy in, how filled .....	59
duty of, with regard to rulings of the Commission .....	59
to be elected .....	47
proceedings relative to election of .....	47
five members to be a quorum of .....	47
to report to Commission, &c .....	60
what constitutes a majority of .....	98
authorized to elect chairman, and appoint a clerk, employes, and agents .....	98
by-law relative to .....	98
journal to be kept by .....	98
to have powers of the Commission during recess of the Commission .....	98
to report to the Commission .....	98
rulings of the commission to be followed by .....	98
member of, not to be appointed on other committees .....	98
vacancy on, to be filled by the chairman provisionally .....	98
president of Commission to be a member of no other committee .....	98
Vienna Exhibition, remarks relative to .....	116
of international patent congress, William P. Blake appointed on .....	...
Executive Departments, Executive Order relative to a collective exhibition by .....	21, 368
of General Government, offers of co-operation from .....	5
Department of Agriculture and Smithsonian Institution included in Executive order relating to .....	21
proposal relative to a collective exhibition by .....	12
Executive Order by the President relative to a collective exhibition by the Executive Departments, the Department of Agriculture, and the Smithsonian Institution .....	5, 12, 21, 368
Exhibition. <i>See</i> International Exhibition of 1876; Vienna Exhibition; Paris Exhibition; London Exhibition, &c.;	
all articles intended for, at International Exhibition of 1876, to secure proper position and classification, to be in Philadelphia on or before January 1, 1875. ....	323
buildings. <i>See</i> Buildings for the International Exhibition of 1876, &c.	
report relative to .....	29
goods, safety of .....	274
hours .....	22
of agricultural resources, industries, and implements to be a special feature .....	5
of fine arts, special regulations relative to, to be issued .....	26
of fishery products and apparatus for capturing and preserving fish .....	5
of horses, cattle, &c., to be extensive and thorough .....	5
of samples of the productions of the country traversed, proposed by the Northern Pacific Railroad .....	90
unions, remarks on .....	275
of works of art and industry, classification .....	368
Exhibitions, list of the most remarkable .....	296
of art and industry, section on, at Vienna Exhibition .....	117
Exhibitors' agents, regulations concerning .....	24
to receive goods sent, unpack, &c. ....	24
Exhibitors at International Exhibition of 1876, privileges of, granted only to citizens of countries whose governments have formally accepted invitation to be represented, and appointed commission .....	323
at Paris Exhibition of 1867, table showing number of exhibitors in various groups .....	229
at Vienna Exhibition, number of .....	227
table showing number of, in various groups .....	228
from foreign countries. <i>See</i> Foreign exhibitors.	
in the Exhibition, regulation relative to .....	25, 26
of machinery at Vienna Exhibition, rules for .....	183
rules affecting, to be made by the Commission .....	101
<i>(See Report of conference committee.)</i>	
transportation, unpacking, &c., of goods to be at expense of .....	23
Exner, Dr. W. F., observations by, on great exhibitions .....	272
on installation of goods at great exhibitions .....	181
Expenditures by the Commission, manner of .....	99
by various nations for representation at the Vienna Exhibition .....	179
at Vienna Exhibition, for buildings, &c .....	126-127
of foreign countries at Paris Exhibition of 1867 .....	128
Expenses of the Commission, appropriation of \$50,000 by City of Philadelphia, for .....	92

	Page.
Expenses of the Commission, report relative to .....	71
of the Board of Finance .....	92, 93, 94
of the Citizens' Committee .....	92, 93, 94
Paris Exhibition of 1867 .....	128
Experience, value of, in the conduct of international exhibitions .....	266
Experimental farm, communication from Horace J. Smith relative to .....	91
Explanation of the plan of the main Exhibition building .....	15
Explosive articles excluded from the Exhibition .....	25
compounds, classification of .....	352
Exposition. <i>See</i> International Exhibition of 1876; London Exhibition; Paris Exhibition; Vienna Exhibition, &c.	
Extent and cost of the great international exhibitions, table of .....	272
Exterior grounds, Vienna Exhibition, spaces allotted in .....	132
Extractive arts, classification of machines, tools, and apparatus used in .....	355
Extracts of animal or vegetable origin used chiefly for food, classification of .....	349
<b>F.</b>	
Faience, classification of .....	351
Fairmount Park Commission. <i>See</i> Commissioners of Fairmount Park.	
invitation to visit .....	55
the place of holding the International Exhibition of 1876 .....	323
remarks on, as the site for the Exhibition .....	82
the importance of steam railway communication with, from the City .....	91
transfer of grounds in, to the Commission .....	7
views of European engineers as to the suitableness of, as the site of a great exhibition ..	311
Fans, classification of .....	353
Farm house, place of, in classification of Vienna Exhibition .....	167
Feathers, classification of .....	349
Fees of admission to international exhibitions, importance of fixing at a low rate .....	327
Felted fabrics, classification of .....	352
Felting machines and implements, classification of .....	355
Felton, Samuel M., elected director of Board of Finance .....	89
Fencing Vienna Exhibition, length of .....	131
Fertilizing compounds, classification of .....	350
Festivals under the auspices of the Women's Executive Committee .....	7
Fibrous substances of vegetable or animal origin used in the arts, classification of .....	347
Finance. <i>See</i> Committee on.	
Finance and accounts, committee on, to be appointed annually .....	54, 61
Board of. <i>See</i> Centennial Board of Finance.	
bureau, Vienna Exhibition, remarks relative to .....	121
committee on .....	336
of Philadelphia, services of .....	68
( <i>See also</i> Citizens' Centennial Finance Committee.)	
Vienna Exhibition .....	115
officers of Centennial Board of .....	337
Finances Vienna Exhibition, remarks relative to .....	124
Financial administration Vienna Exhibition, imperial decree upon .....	126
basis of the Paris Exposition of 1867 .....	3
of the Vienna Exhibition .....	3
condition and wants of the Exhibition of 1876 .....	325
results of Exhibition of 1876 to be reported to the President of the United States .....	342
Fine-art department of the Exhibition, communications relative to .....	5
interest felt by American artists in .....	5
gallery, International Exhibition of 1876. <i>See</i> Memorial building.	
Vienna Exhibition, table showing area in acres of .....	303
Fine arts of the present, place of, in classification of Vienna Exhibition .....	167
jewelry, classification of .....	353
Fire-department of Vienna Exhibition .....	191
and water-works at Vienna Exhibition, description of, and remarks relative to .....	289
First Vice-President Centennial Board of Finance, notification of the election of Mr. William Sellers ..	34
Fish, exhibition of apparatus for capturing and preserving, proposed .....	5
and aquatic life, classification of .....	348
culture, appointment of committee on .....	62
exhibition of objects relating to .....	5
products, classification of .....	348
Fisheries. <i>See</i> Committee on commerce and fisheries.	
and fish-culture. <i>See</i> Committee on.	
of the world, collection of objects illustrating, to be exhibited .....	5
Fishery products and apparatus for capturing and preserving fish .....	5
Fitler, Edwin H., elected director of Board of Finance .....	89
Flax-trade, international congress of, at Vienna .....	249
Floor-space, amount of, in the Exhibition .....	82
Flooring at Vienna Exhibition, description of, and remarks relative to .....	150
expense of .....	183
regulations as to expense of .....	176
Floral department of Exhibition, offers to co-operate in .....	90
Floriculture, classification of .....	346
and horticulture, committee on .....	337
( <i>See also</i> Committee on horticulture and floriculture.)	
Flowers at Vienna Exhibition, remarks relative to .....	146
classification of artificial .....	353
Food as products of industry, group in classification of Vienna Exhibition .....	166
classification of materials and manufactures used for .....	349
Foote, the Hon. Henry S., resolution of thanks to .....	64
Foreign Affairs, committee on .....	336
( <i>See also</i> Committee on.)	



	Page.
Foreign commissions, privileges and duties of .....	22
commissioners, Paris Exhibition of 1867, number of .....	124
correspondents at Vienna Exhibition, remarks relative to .....	207
division, Vienna Exhibition, section on .....	117
exhibitors and commissions at Vienna Exhibition, rules for .....	183
regulations for .....	22, 323
to be allowed space by the commission from their own country .....	22
governments, action of, relative to the President's invitation to participate in the Exhibition ..	3
considerable appropriations already made by, for Exhibition of 1876 .....	324
responsibility of the United States to, for the success of the Exhibition .....	3
ministers, note of invitation sent to, by the Secretary of State .....	322
nations cordially invited to participate in International Exhibition of 1876 .....	323
requested to formally accept invitation previous to March 4, 1874 .....	323
favorable responses from .....	12
requested to appoint commissions to reside in Philadelphia until close of Exhibition of 1876 .....	323
privileges of exhibitors granted only to citizens of countries whose governments have formally accepted invitation and appointed commission .....	323
acts of Congress pertaining to custom-house regulations, duties, &c., and all regulations adopted by the Commission to be promptly communicated to accredited representatives of .....	323
Forest products, classification of .....	346
Forestry, classification of machines, tools, and apparatus used in .....	355
place of, in classification of Vienna Exhibition .....	165
Forfeiture of space, regulation relative to .....	23
Forms and books for subscriptions supplied to national banks throughout the country .....	325
Forwarding of goods to the Exhibition, regulation concerning .....	24
Foundations, classification of .....	363
Fourth of July, 1873, date of transfer and dedication of grounds in Fairmount Park to the Commission ..	7
Fox, Daniel M., elected director of Board of Finance .....	89
remarks of .....	39
Fraley, Frederick, secretary and treasurer Board of Finance .....	333
France, appropriation by, to secure representation in Vienna Exhibition .....	128
area of surface assigned to, in the Paris Exhibition of 1867 .....	136
table showing area of ground allotted to, at Vienna Exhibition .....	134
Freight and passengers, comparison of receipts of, on railroads of Austria, showing increase of 1873 over 1872 .....	156-157
French Exposition of 1867. <i>See</i> Paris Exhibition of 1867.	
French, O. C., elected chairman of committee on tariffs and transportation .....	66
Fruits, preserved, classification of .....	349
Fulminating compounds, classification of .....	352
Fund appropriated by the City of Philadelphia; manner of the disbursement of .....	93
Furnishing and decoration of interiors of buildings, classification of .....	364
Furniture, classification of .....	353
classification of trimmings for .....	353
fittings of hardware, classification of .....	354
Furs, classification of .....	349

## G.

Gallery of fine arts of Exhibition. <i>See</i> Art-gallery.	
Vienna Exhibition, table showing area in acres of .....	303
Garden, table showing area assigned to, at Paris Exhibition of 1867 .....	135
Gardening bureau, Vienna Exhibition .....	1
remarks relative to .....	120
Gardens around industrial palace, Paris Exhibition of 1867, area of .....	300
Gases, classification of .....	351
Gas-fitters' hardware, classification of .....	354
Geary, John W., Governor of Pennsylvania, recommends the Celebration in his annual message .....	68
General collection of objects representing the fisheries of the world to be exhibited .....	5
commission Paris Exhibition of 1867; number of persons engaged .....	124
direction of the Exhibition of 1876, reserved to the Commission .....	72
of Vienna Exhibition. <i>See</i> Vienna Exhibition.	
conferred by imperial letter and decree upon Privy Counselor Baron William von Schwarz-Senborn, with title of imperial and royal general-director .....	117
remarks concerning .....	117, 118
expression of the classification .....	7
director. <i>See</i> Director-general.	
Government, address to the officers of .....	69, 81
Executive Departments of, to make a collective exhibition .....	12
inquiry and reclamation office, Vienna Exhibition .....	188
offices, Vienna Exhibition, remarks relative to .....	122
regulations adopted by the Commission and sent abroad .....	323
for International Exhibition of 1876 .....	22, 323
remarks on the work and prospects of the Commission .....	7
review of the work of the Commission to May 1, 1873 .....	93
scope of the Exhibition .....	6
work of the Commission .....	2
<i>See</i> Work of the Commission.	
Generalization and analysis, opportunities for, afforded by the scheme of classification adopted .....	80
Geographical arrangement of objects at Vienna Exhibition .....	283
George's Hill, Fairmount Park, suggestions for connecting, with the Exhibition buildings by a suitable avenue .....	313
German Empire, appropriation by, to secure representation in Vienna Exhibition .....	128
official acceptance by, of the President's invitation to participate in the Exhibition of 1876 .....	3-324
table showing area of ground allotted to, at Vienna Exhibition .....	134

	Page.
Giant powder, classification of .....	352
Gillespie, Mrs. E. D., acknowledgements to, as chairman of the Women's Centennial Executive Committee .....	56
president of the Women's Centennial Executive Committee .....	7
recognition of by the Commission as president of the Women's Executive Committee .....	70
Glass, classification of .....	351
Gloves, mittens, &c., classification of .....	353
Glycerine, classification of .....	352
Goods at Vienna Exhibition, regulations relative to reduction of rates of transportation of .....	150-156
Goods exhibited, efforts to insure safety of .....	24
responsibility for damage to .....	24
forwarding of .....	24
removal of .....	26
intended for exhibition, delivery and removal of .....	23
Gorham, John, elected director of Board of Finance .....	89
Goshorn, Alfred T., elected to executive committee .....	56
election of, as Director-General, reported by the executive committee .....	67
unanimously confirmed .....	67
member of executive committee .....	335
committee on plans and architecture .....	336
report of .....	11
unanimously elected Director-General of the Commission .....	2
vice-president of the Commission .....	335
director-general of the Commission .....	335
visits the Vienna Exhibition .....	2
enters upon his duties as Director-General .....	2
(See also Director-general, Report, &c.)	
Government and law, group in classification assigned to .....	366
of the United States, address to officers of .....	81
considerations which should induce an appropriation to the Exhibition by .....	3
Exhibition of 1876 to be held under the auspices of .....	326
Governmental appropriation considered necessary by the Director-General .....	12
appropriations for international exhibitions, remarks concerning .....	2
to the Paris Exposition of 1867 .....	3
to the Vienna Exhibition .....	3
regulations concerning Vienna Exhibition .....	113
Governor of Pennsylvania commends the Celebration in his inaugural .....	68
letter to, from Daniel J. Morrell, commissioner for Pennsylvania, relative to State appropriation, &c .....	69, 84
thanks tendered to .....	68
Governors of the several States and Territories, convention of, committee appointed to attend .....	67
suggestions made to .....	11
to be notified of vacancies in the Commission .....	56
Grand pavilion, description of, &c .....	373
Grants and privileges in the Exhibition, right to allow, reserved to the Commission .....	70
Graphic arts, classification of .....	363
and industrial drawing, place in classification of Vienna Exhibition .....	166
and plastic arts, place in the classification .....	6
Great Britain, expenditures by, at Paris Exhibition of 1867 .....	128
remarks relative to catalogue of, at Vienna Exhibition .....	202
table showing area of ground allotted to, at Vienna Exhibition .....	134
Greece, appropriation by, to secure representation in Vienna Exhibition .....	128
Grounds inclosed for Paris Exhibition of 1867, area of .....	131
Vienna Exhibition, area of .....	131
of Vienna Exhibition, spaces allotted outside the fence .....	132
Group on religious organizations and systems .....	78
Groups in the classification, changes in notation of .....	30
subdivision of departments into .....	6
table showing number of exhibitors in, at Vienna Exhibition .....	228
table showing number of exhibitors in, at Paris Exhibition of 1867 .....	229
Guarantee-fund Paris Exhibition of 1867, number of subscribers to .....	124
Vienna Exhibition, remarks relative to .....	124

## H.

Hackmen at Vienna during exhibition, complaints against .....	162
Haines, B. H., elected secretary of executive committee .....	67
Hand-work and machines, comparison of the production of, at Vienna Exhibition .....	168
Hardware used in construction, exclusive of tools and implements, classification of .....	354
Harkort, M., of Harkorten, Prussia, contract for the dome of the Vienna Exhibition building undertaken by .....	303
Harmony between the Commission and the Board of Finance, remarks on the importance of maintaining .....	101
Harrisburgh, visit of executive committee to .....	68
Hartranft, John F., Governor of Pennsylvania, acknowledgments to .....	68
(See also Governor of Pennsylvania.)	
Hats, classification of .....	353
Hawley, Joseph R., elected president of the Commission .....	55, 335
address of .....	27, 55
(See also President of the Commission.)	
election of, declared unanimous .....	55
general review of the work and prospects of the Commission by .....	7
Hayti officially accepts the invitation to participate in the Exhibition .....	3, 324
Heating apparatus and fixtures, classification of .....	354
Heir-loom, value of certificate of stock as, suggested .....	77
Hewitt, A. S., elected director of Board of Finance .....	89



	Page.
Hinges, classification of.....	354
Historical notice of great exhibitions, by Dr. Exner.....	272
History, literature, and popular education, committee on.....	336
History of Austrian industries, description of, and remarks upon importance of.....	203
of exhibitions.....	274
of industries of United States for the last century, remarks relative to importance of.....	204
of permanent museums.....	276
of prices, as given at the Vienna Exhibition.....	168
(See also Committee on history, literature, and popular education.)	
of the progress and method of transacting business of each Department, suggested by the Director-General.....	17
of the progress of the United States during the past century, communication from Franklin B. Hough relative to.....	35
Holland, table showing area of ground allotted to, at Vienna Exhibition.....	134
Horse exhibition, Vienna Exhibition, space devoted to.....	133
Horse-railways, remarks on the inadequacy of, to purposes of the Exhibition.....	91
Horticulture, &c., place in classification of Vienna Exhibition.....	165
special committee on, appointed.....	65
Horticulture and floriculture. See Committee on.....	336
committee on.....	90
Horticultural department of Exhibition offers to co-operate in.....	209
Hotel accommodations for visitors during the Vienna Exhibition.....	357
Hoisting and lifting apparatus.....	
Hough, Franklin B., of New York, communication from, relative to the progress of the United States during the past century.....	35
Hours during which the Exhibition will be open.....	22
House of Representatives of the United States, message from the President to, transmitting report of the Commission.....	1
of Pennsylvania, meeting of executive committee with.....	68
Household implements, classification of.....	354
Hungary, division for, Vienna Exhibition, section on.....	117
table showing area of ground allotted to, at Vienna Exhibition.....	134
<b>I.</b>	
Illuminating gases, classification of.....	351
Immediate subscriptions, necessity of.....	33
Imperial Austrian Musuem for Art and Industry.....	277
Commission Paris Exhibition of 1867, number of.....	124
number of committees of.....	124
Vienna Exhibition, working organization of.....	115
committees of, remarks on.....	117
decree upon the financial administration Vienna Exhibition.....	126
pavilion Vienna Exhibition, description of.....	149
Implements, classification of.....	355
place in the classification.....	6
of agriculture to be a feature of the Exhibition.....	5
Improvement of the condition of man, objects illustrating efforts for.....	6
Inaugural address of Governor of Pennsylvania, commendation of Celebration in.....	68
Inclosed grounds for Paris Exhibition of 1867, area of.....	131
for Vienna Exhibition, area of.....	131
Inclosures to the report of W. P. Blake on the Vienna Exhibition.....	110
Income at Vienna Exhibition.....	127
Index to journal of proceedings of the Commission at third session, May, 1873.....	102
Indiana, alternate commissioner from, report of the committee on credentials relative to.....	36
action relative to the credentials of F. C. Johnson, as alternate commissioner for.....	29
India-rubber manufactures, &c., group in classification of Vienna Exhibition.....	166
Industrial engineering, classification of.....	363
exhibitions, list of the most remarkable.....	296
designs, classification of.....	364
hall at Karlsruhe.....	277
interests of the country, prominence to be given to.....	58
organizations, co-operation of, invited.....	82
Palace of Vienna Exhibition, remarks relative to.....	147
length of walls.....	147
table showing cost of.....	147
cost per acre of.....	148
total area of.....	148
table showing dimensions of rotunda, compared with some of the largest domes of the world.....	149
table showing area of, &c.....	133, 302
weight of iron-work of rotunda of.....	303
Industries of America, review of, by President F. A. P. Barnard.....	330
of Austria, description of and remarks upon the importance of the history of.....	203
of China and other oriental nations, efforts to secure representation of, in the Exhibition.....	62
of the United States, remarks relative to importance of a history of.....	204
Industry and art exhibitions, section on, Vienna Exhibition.....	117
Inflammable articles to be excluded from the Exhibition.....	25
Influence of science in gradually utilizing the waste in manufactures.....	168
Information relative to Vienna Exhibition obtained by the special agents of the Commission to Vienna.....	2
Inlaid work, classification of.....	364
Inspection bureau, Vienna Exhibition, remarks relative to.....	121
Installation at Vienna Exhibition.....	170, 171
at Paris Exposition of 1867.....	177
time required for.....	177
Dr. Exner on.....	181
bureau at Vienna Exhibition, organization of.....	175

	Page.
Installation bureau at Vienna Exhibition, remarks relative to .....	120
various modes of .....	171
syndicates of Paris Exhibition of 1867, number of .....	124
Installments upon stock. <i>See</i> Centennial Board of Finance; Stock of Board of Finance, &c.	
Institutions, societies, and organizations having for their object the promotion of science, classification of .....	367
Instructions to W. P. Blake, agent to Vienna .....	69
Instruments and apparatus of medicine and surgery, sanitary apparatus, &c. ....	356
of precision and apparatus of physical research, experiment, and illustration .....	359
Insurance associations, &c., classification .....	367
Intellectual and moral aspect of the Exhibition .....	78, 80
condition of man, place in the classification of objects, &c., illustrating efforts for the im-	
provement of .....	6, 365
Interior transportation, necessity for, in great exhibitions .....	161
International and universal, the terms as applied to exhibitions considered .....	82
character of the Exhibition of 1876; the basis and fundamental idea of the act approved	
March 3, 1871 .....	326
and national character of the Exhibition of 1876 .....	326
comparison involved in the Exhibition of 1876, consideration of, by John L. Campbell,	
secretary of the Commission, of the nature and propriety of .....	333
congress to consider questions of international and maritime law, resolution relative to ..	62
conferences. <i>See</i> International congresses.	
congresses at Vienna for consideration of various subjects .....	248, 258, 265
in connection with the Vienna Exhibition, list of .....	248
at Vienna Exhibition for discussion of various subjects .....	169
Exhibition at Vienna visited by Director-General Goshorn .....	2
( <i>See also</i> Vienna International Exhibition.)	
of 1867 at Paris. <i>See</i> Paris Exhibition of 1867.	
remarks relative to organization of .....	123, 124
of 1876, views of the President of the United States relative to .....	1
Prince Bismarck recommends a participation in, to the German Par-	
liament, and the appointment of commissioners .....	3
responsibility of the United States as a republican nation for the suc-	
cess of .....	3
communications relative to agricultural department of .....	5
communications relative to fine-art department of .....	5
remarks on the benefits to be derived from .....	6
scope of .....	6
erection of the buildings .....	7
resolutions by State legislatures requesting their senators and repre-	
sentatives to aid .....	7
transfer of ground to the Commission for .....	7
publicity given to, by European journals .....	7
plans for the buildings submitted to the President and Congress .....	11
area of the proposed building .....	12
favorable responses from foreign nations .....	12
description of principal industrial building .....	15
advantages of the plan adopted .....	15
proposed duration of .....	22
exhibition hours .....	22
allotment of space in .....	22
last date of receiving applications for space .....	22
custom-house regulations .....	23
delivery and removal of goods .....	23
reception and installation of goods .....	23
regulations for foreign exhibitors .....	22, 323
charges and exemptions .....	24
precautions for safe preservation of goods exhibited .....	24
insurance on goods exhibited .....	24
Commission not to be responsible for damage or loss to goods exhib-	
ited .....	24
regulation relative to removal of goods from .....	26
photographs of goods exhibited .....	25
inflammable and explosive articles .....	25
patent medicines .....	25
report relative to buildings, &c. ....	29
action relative to the submission of plans to the Board of Finance .....	31
appropriation by City of Philadelphia toward the buildings for .....	68
buildings for, to be erected by Board of Finance .....	70
plans for buildings to be provided by the Commission .....	70
powers and duties of the two bodies charged with the conduct of .....	70
the Commission to be the medium of communication with foreign	
countries concerning .....	71
time required for erection of buildings for .....	80
influence of, upon the spiritual welfare of the people urged upon the	
clergy and religious associations of the United States .....	80
importance of, as a means of education considered .....	80
building for, to be a bonded warehouse .....	91
preliminary sketches of plans for buildings invited for the first or	
unlimited competition .....	97
premiums for designs .....	97
suggestions as to the necessity of interior steam-railway service in .....	161
conferences, communications, &c., relative to site for .....	94, 95
correspondence with the Commissioners of Fairmount Park relative to	
grounds selected for .....	95, 96
specifications for plans for .....	96
time at which buildings for should be finished .....	145



	Page.
International Exhibition of 1876, official title of.....	97
Commission charged with the conduct of.....	97
suggestions as to special exhibitions at, by States and corporations...	172
remarks relative to importance of a history of the industries of the United States for the last century, for.....	204
remarks relative to duration of.....	226
suggestions and recommendations of W. P. Blake as to the system of prizes and awards to be adopted at.....	243
suggestions of Mr. Scott Russell in regard to buildings of.....	293
remarks of Mr. Henry Pettit on decoration of the buildings, exterior and interior .....	286
what inducements and safeguards necessary to induce foreigners to send goods for exhibition .....	270
donations to the permanent museum.....	270
donation of collection of specimens of the iron ores of Sweden and Norway .....	270
donations of specimens of Norway copper-ore, ornamental bricks, and terra cotta, mangan iron, bauxite, ozokerite, &c.....	271
importance of securing a representation of the ceramic art .....	271
Turkish bazaar, coffee-house, and bathing establishment to be estab- lished.....	271
costly buildings not necessary .....	268
importance of provision for prompt publication of catalogues and re- ports, and for securing statistical and descriptive information of objects exhibited .....	268
importance of early provision for protection to the interests of exhib- itors .....	269
sentiment and co-operation abroad, as reported by the special agent, Prof. William P. Blake .....	269
suggestions and recommendations of Mr. Henry Pettit as to the position of the buildings, treatment of the grounds, &c.....	311, 313
considerations presented by Mr. Henry Pettit, with reference to the materials and superstructure of the buildings.....	317
action of the executive branch of the National Government rela- tive to .....	321
proclamation by the President of the United States relative to.....	321
form of note sent by Secretary of State to foreign ministers rela- tive to .....	322
to be held at Fairmount Park, Philadelphia .....	323
date of opening and closing .....	323
cordial invitation to, extended to foreign nations.....	323
formal acceptance of invitation to, requested previous to March 4, 1874 .....	323
each nation accepting the invitation requested to appoint a commis- sion to reside in Philadelphia until close of .....	323
privileges of exhibitors granted only to citizens of countries whose governments have formally accepted the invitation and appointed a commission.....	323
all communications to be made through governmental commissions ..	323
application for space to be made previous to March 4, 1875 ..	323
suggestions as to colored and glazed brick, terra-cotta, and tile-work in the buildings .....	318
necessity of having the buildings of a sufficiently substantial char- acter.....	320
importance of proper railway communications.....	320
importance of having the buildings entirely finished at date of open- ing .....	320
financial condition and wants of.....	325
special advantages claimed for.....	325
character of.....	326
credentials of commissioner of Ecuador presented at Philadelphia ..	324
considerable appropriations already made by some foreign govern- ments.....	324
national banks throughout the country empowered to receive sub- scriptions and supplied with the necessary books and forms.....	325
amount appropriated and subscribed by Philadelphia and Pennsyl- vania .....	325
appropriations to be expended in erection of a memorial building...	325
causes which delay subscriptions.....	325
expectation by the people of Congressional action .....	325
to be held under the auspices of the Government .....	326
importance of improving to the utmost the time remaining for the preparations .....	331
referred to in acts of Congress as a national celebration ....	326
members of the Commission .....	326
Commission required to report to the President and Congress.....	326
Secretary of the Treasury to prepare certificates of stock .....	326
commemorative of our birth as a nation .....	326
comparison between the evidences of our progress in a century and that of other nations declared in act of Congress one of the leading objects of .....	326
the international character the basis and fundamental idea of the act approved March 3, 1871 .....	326
invitations from the Government to other governments the first essential step for an international exhibition. ....	326
reasons for a formal invitation to other governments.....	326
governments never appoint commissioners unless invited to partici- pate .....	326

	Page.
International Exhibition of 1876, fees of admission, importance of fixing at a low rate.....	327
the true ideal of, as stated by Prof. John L. Campbell.....	333
to be an illustration of the progress of invention.....	335
wider scope of, than any previous exhibition.....	335
duties of the Commission and the Board of Finance after close of ....	342
financial results of, to be stated in a final report to the President of the United States.....	342
Commission to report relative to.....	343
entrance and admission fees to be fixed by the Commission.....	342
judges and examiners to be appointed by the Commission.....	342
awards of premiums, &c., to be made by the Commission.....	342
preamble to act of Congress creating Commission to conduct .....	338
commissioners to be nominated by the several Governors and ap- pointed by the President.....	339
alternate commissioners.....	339
place of meeting of the Commission.....	339
duties of the Commission .....	339
United States not to be liable for expenses of .....	339
President of the United States to make proclamation, &c.....	339
acts of Congress relative to.....	338
to be held in Philadelphia under the auspices of the United States Government .....	339
a Commission provided for.....	339
time within which commissioners to be appointed .....	339
classification of apparatus and methods for the increase and diffusion of knowledge .....	358
classification of motors and transportation.....	356
full diagrams of the buildings and grounds to be furnished to the com- missioners of the different nations which shall accept the invita- tion.....	323
all articles intended for exhibition, in order to secure proper position and classification, to be in Philadelphia on or before January 1, 1876 .....	323
acts of Congress pertaining to custom-house regulations, duties, &c., and all regulations, to be promptly communicated to accredited rep- resentatives of governments co-operating in Exhibition.....	323
acceptance of invitation to participate in, by the German Empire.....	324
by the Netherlands....	324
by Belgium.....	324
by Sweden and Nor- way .....	324
by Switzerland .....	324
by Mexico .....	324
by Ecuador.....	324
by Hayti .....	324
by Sandwich Islands..	324
summary of classification.....	343
key to groups and classes.....	344
classification of raw materia s, mineral, vegetable, and animal.....	344
of materials and manufactures used for food or in the arts .....	349
of textile and felted fabrics, apparel, costumes, and orna- ments for the person.....	352
of manufactures of general use in construction and in dwellings.....	354
of tools, implements, machines, and processes.....	355
of engineering, public works, architecture, &c.....	362
of plastic and graphic arts.....	363
of systems, objects, and apparatus, illustrating efforts for the improvement of the physical, intellectual, and moral condition of man .....	365
prizes offered for a satisfactory plan of buildings.....	371
report of committee on plans and architecture.....	369
regulations relative to competition for plans of buildings.....	370
list of competitors for plans of buildings .....	370
description of memorial hall.....	376
grand pavilion .....	373
location of the various buildings .....	374
of floriculture at Amsterdam.....	273
of cheese at Paris in 1865 .....	273
considerations to govern the selection of a place for holding.....	273
International exhibitions, bad effects of tardiness in preparations for .....	266
inestimable importance of the systematic comparative arrangement of ob- jects in addition to the geographical.....	266
compactness essential to success.....	267
considerations governing the establishment of rates of admission.....	267
accessibility a condition of success .....	267
beneficial influence of, upon commerce, internal and external.....	329, 330
benefits of.....	6, 272, 274. 327, 328, 329, 330
comparison of circular and rectangular buildings as adapted to the pur- poses of.....	315
consideration of the utility of prizes, &c., at .....	242
costly buildings not desirable.....	268
importance of prompt publication of catalogues and provision for reports...	268
effects of, on national industry and art .....	330
extent and cost of.....	272
extracts from a letter of William H. Seward relative to.....	328



	Page.
International exhibitions, importance of early provision for reports on the various groups at.....	204, 244
separate reports for working classes at.....	205
materials used in buildings of.....	317
not all "great" or "universal" exhibitions.....	273
benefits of, to the German people.....	273
history of.....	274
first idea of.....	274
observations on, by Dr. W. F. Exner.....	272
observations of Mr. Scott Russell on buildings for.....	293
remarks on the general necessity of government aid to.....	2
liberality of European governments to.....	3
proportion of visitors to the surrounding population.....	221
views of the President relative to.....	1
juries, special regulations relative to, to be issued.....	26
jury of awards at Vienna Exhibition, hospitalities to.....	245
at Paris Exhibition of 1867, organization of.....	234
table showing number of members of.....	234
law, congress for the consideration of, proposed.....	62
medical congress in 1876, action relative to.....	63
patent congress, at Vienna.....	258
importance of, to the United States.....	259
suggestion as to holding, in connection with International Exhibition of 1876.....	258
at Vienna, programme of.....	259
proceedings of.....	260, 262, 264
executive committee of.....	264
Interrogatories for exhibitors at Vienna Exhibition, form of.....	237
Introduction of directors of Centennial Board of Finance and board of State Supervisors.....	38
Inventions, epitome of the history of, at Vienna Exhibition.....	168
from 1776 to 1876, review of.....	334
Invitation from the Government of the United States to other governments the first essential step for an international exhibition.....	326
to Board of Finance to meet Commission.....	34
sent by the Secretary of State to foreign ministers.....	322
to foreign nations to participate in International Exhibition of 1876.....	3, 323
to meet Womens' Executive Committee accepted.....	48
to members of the Board of State Supervisors of Pennsylvania to meet the Commission.....	35
to participate in Exhibition, foreign nations requested to formally accept, previous to March 4, 1874.....	323
to visit Fairmount Park.....	55
to participate in International Exhibition of 1876, acceptance of, by the German Empire.....	324
by the Netherlands.....	324
by Belgium.....	324
by Sweden and Norway..	324
by Switzerland.....	324
by Mexico.....	324
by Ecuador.....	324
by Hayti.....	324
by Sandwich Islands.....	324
Iron, specimens of, for exhibition.....	5
Italy, anticipated display of the art and manufactures of, in the Exhibition.....	4
appropriation by, to secure representation in Vienna Exhibition.....	128
table showing area of ground allotted to, at Vienna Exhibition.....	134
<b>J.</b>	
Japan, appropriation by, to secure representation in Vienna Exhibition.....	128
executive committee requested to take measures to secure a representation of industries, &c., of and China, table showing area of ground allotted to, at Vienna Exhibition.....	62
and China, table showing area of ground allotted to, at Vienna Exhibition.....	134
Jenkins, Admiral T. A., U. S. N., appointment of, by the Secretary of the Navy upon the board of management of the collective exhibition by the various Departments, &c.....	369
Jewelry, classification of.....	353
Johnson, Franklin C., presentation of credentials of.....	29
proceedings in reference to credentials of, as alternate commissioner from Indiana.....	29, 38, 42, 43
report of committee on credentials relative to credentials of.....	36
Joint committee of Commission and Board of Finance relative to rights and duties of the two bodies.....	31
of Councils of Philadelphia, conference with, &c.....	68
favorable action of.....	68
(See also Conference Committee.)	
resolutions. See Resolutions.	
Jones, S. S., communication from, relative to a machine for the manufacture of wool.....	35
Journal of proceedings of the Commission.....	26
printing of, &c.....	93
provision for, &c.....	99
at third session, May, 1873.....	102
of executive committee, how to be kept, &c.....	59
of proceedings of the executive committee.....	98
Judges and examiners to be appointed by the Commission.....	101, 342
Juries of awards, remarks on.....	243
at Paris Exhibition of 1867, organization of.....	235
table showing number of members of.....	234
duties of.....	235
upon fine arts, agriculture, and industry, (associate members and substitutes,) number of.....	124
of admission of works of art, number of.....	124
for the gallery of history of labor.....	124

	Page.
Juries at Paris Exhibition of 1867, upon alimentary establishments .....	124
of order of recompenses, number of .....	124
upon fine arts, agriculture, and industry .....	124
of Vienna Exhibition, commencement of work of .....	235
explanations of regulations for .....	235
difficulties of work of .....	236
form of questionnaire .....	237
regulations for organization of .....	229
<i>See International juries.</i>	
Jurors, tardiness in nominating, at Vienna Exhibition .....	233
table showing number of, appointed for each group at Vienna .....	234
division into sections at Vienna .....	234
special juries, at Vienna Exhibition .....	234
Jury bureau, Vienna Exhibition, remarks relative to .....	121
of awards at Vienna Exhibition, hospitalities to .....	244
accommodations for .....	245
<i>See International jury, jury of installation, jury of awards, &amp;c.</i>	

## K.

Kelley, the Hon. William D., courtesies extended to .....	50
address of .....	50
Kentucky, acknowledgments to legislature of .....	69
resolutions of the legislature of, indorsing the Exhibition and requesting Senators and Rep-	
resentatives to support it .....	7, 69, 75
Key to notation of classification .....	344
Kimball, Charles P., of Maine, recognized as alternate commissioner from Maine .....	35
Kingdom of Italy. <i>See Italy.</i>	

## L.

Labels of packages from foreign countries, regulations concerning .....	24, 25
descriptive .....	25
Labor, price of, at Vienna, during the exhibition .....	143
Laces, classification of .....	353
Ladies' committee. <i>See Women's Centennial Executive Committee.</i>	
Lamborn, Robert H., member of committee on plans and architecture .....	336
Land and forest cultivators, international congress of, at Vienna .....	265
Landscape gardening, classification of .....	364
Latches, classification of .....	354
Law and government, group in classification assigned to .....	366
bureau, Vienna Exhibition, remarks relative to .....	121
Lead, specimens of, for Exhibition .....	5
Leather and India-rubber manufactures, group in classification of Vienna Exhibition .....	166
Lectures on the importance, &c., of the Exhibition suggested .....	81
on various subjects at Vienna Exhibition .....	168
Legislation, committee on .....	336
<i>(See also Committee on legislation.)</i>	
Legislature of Pennsylvania, meeting of the executive committee with .....	68
appropriate one million dollars toward Exhibition buildings .....	68
Legislatures of various States, resolutions by, indorsing the Exhibition, and urging an appropriation	
by the General Government .....	69, 72, 73
Lennox, Lord Henry G., extracts from a paper by, on the beneficial effects of international exhibitions	
on national industry and art .....	330
Letter from N. M. Beckwith and Charles H. Marshall, commissioners for New York, to Senators and	
Representatives from that State .....	331
of Daniel J. Morrell, commissioner for Pennsylvania, to the Governor of that State, relative to a	
State appropriation to the Exhibition .....	84
of W. P. Blake, transmitting report as special agent to Vienna .....	109
of thanks from John L. Shoemaker .....	63
<i>(See also Circular-letter ; Communication, &amp;c.)</i>	
to Governor of Pennsylvania relative to State appropriation .....	69
Liberal culture, appeal to citizens of, to promote the interests of the Exhibition .....	81
Library furniture, classification of .....	354
Life and Correspondence of George Read, of Delaware, copy of, presented to Commission .....	34
Light-house Board, communication from the secretary of, relative to space required .....	20
Lighting apparatus and fixtures, classification of .....	354
Limitation of time of occupying the floor, action relative to .....	54, 62
Linderman, Hon. H. R., Director of United States Mint, communication relative to commemorative	
medals, &c. ....	34
Linc-drawing, classification of .....	363
Linen manufacturers, international congress of, at Vienna .....	249
List of architects, &c., in second competition for plans .....	371
articles intended for exhibition by the Quartermaster-General, and space required .....	20
committees and members of .....	63
as reported by committee on by-laws .....	99
competitors for plans of buildings of International Exhibition of 1876 .....	370
drawings and books accompanying report of Henry Pettit .....	297
members of the board appointed to prepare a collective exhibition by the Executive Depart-	
ments, &c. ....	369
officers and members of the Commission .....	335, 336
papers accompanying the report of the Director-General .....	8
journal of the Commission .....	8
report of W. P. Blake, special agent to Vienna .....	8



	Page.
List of papers accompanying the report of Henry Pettit, special agent to Vienna.....	8, 309
to the President.....	8
reports upon Vienna Exhibition.....	200
standing committees.....	54, 61
the principal buildings for the Exhibition.....	373
the most remarkable industrial exhibitions.....	296
Literature, history, and popular education, committee on.....	336
(See also Committee on history, literature, and popular education.)	
Lithographic announcement of news at Vienna Exhibition, description of and remarks relative to.....	201
Lithography, classification of.....	363
Live stock and agriculture, committee on.....	336
classification of.....	348
(See also Committee on agriculture and live stock.)	
Local committees Vienna Exhibition.....	115
Location of Vienna Exhibition, remarks relative to.....	129
the various buildings for Exhibition of 1876.....	374
Locks, classification of.....	354
London Exhibition of 1851, extent, cost, and receipts of.....	272
increase in the exports of England occasioned by.....	274
list of books and drawings relative to, accompanying report of Henry Pettit.....	297
remarks of Dr. Whewell and Sir David Brewster on, as a means of education.....	80
time occupied in building.....	297
site for building.....	297
area of.....	297
materials used in the construction of.....	297, 317
table showing quantities of materials used.....	297
cost of building.....	297
1862, description of building.....	298
list of some of the quantities of materials used.....	299
extent, cost, and receipts of.....	272, 299
receipts of.....	128
tables showing comparison of receipts from visitors at, with those of other exhibitions.....	225
London, special agent at, communication recommending the appointment of Col. L. M. Montgomery as.....	35
Loring, George B., elected to executive committee.....	56
member of executive committee.....	335
Lowry, Robert elected chairman of committee on the products of the soil.....	66
Lyford, Col. S. C., U. S. A., appointed by the President chairman of the board to prepare a collective exhibition by the Executive Departments, the Department of Agriculture and the Smithsonian Institution.....	369
Lynch, John, elected to executive committee.....	56
member of executive committee.....	336

## M.

Machine for the manufacture of wool, communication from S. S. Jones relative to.....	35
Machinery and conveyances, place in classification of Vienna Exhibition.....	167
Machinery hall, proposed size of.....	373
Vienna Exhibition, area of.....	134, 302, 303
Machines and hand-work, comparison of the products of, at Vienna Exhibition.....	168
Machines, tools, &c., place in the classification.....	6, 355
Magnitude of the preparatory work of the Commission.....	92
Main Exhibition building, description of.....	373
pavilion, or principal industrial building for the Exhibition, explanation of the plan of.....	15
advantages of the plan adopted.....	15
Maine, alternate commissioner of, Charles P. Kimball recognized as.....	35
Manufacture of wool, machine for, communication from S. S. Jones relative to.....	35
Manufactured parts of dwellings, classification of.....	354
Manufactures, committee on.....	336
of different epochs, comparison of.....	168
(See also Committee on.)	
Marine objects, place in classification of Vienna Exhibition.....	167
Maritime law, international congress for the consideration of questions of, proposed.....	62
Marsh, the Hon. George P., dispatch from, relative to the participation of Italy in the Exhibition.....	4
Marshall, Charles H., and N. M. Beckwith, letter from, to Senators and Representatives, relative to a congressional appropriation to the Exhibition.....	331
elected to executive committee.....	56
elected secretary of committee on commerce.....	67
member of executive committee.....	335
Mass-meeting in Philadelphia under the auspices of the executive committee.....	68
effects of.....	68
Materials and manufactures used for food or in the arts, the result of extractive and combining processes, place of, in the classification.....	6
of the buildings of the Exhibition of 1876. See International Exhibition of 1876.	
used in construction of buildings at Vienna Exhibition.....	146
Matthews, F. L., elected chairman of committee on opening services.....	66
McArthur & Wilson, awarded third premium for designs for building.....	372
McCormick, Richard C., elected chairman of committee on legislation.....	66
to executive committee.....	56
member of executive committee.....	336
McDonald, Dr. Charles F., appointment of, by the Postmaster-General, upon the board of management of the collective exhibition by the Executive Departments, &c.....	369
McFadden, William H., chief engineer water-department, Philadelphia, extract from letter of, giving capacity of Belmont reservoir.....	290

	Page.
McKean William V., of the Board of Finance, remarks of.....	40
Means employed to disseminate information of the purposes and scope of the Exhibition .....	325
Meats, preserved, classification of.....	349
Mechanical calculation ; indicating and registering apparatus other than meteorological.....	360
Mecklenburgh Declaration of 1775, reference to, in resolutions on the Exhibition, by the legislature of North Carolina.....	73
Medals, commemorative, communication from Director of United States Mint.....	34
to exhibitors, proposed improvement of the system of awarding, for the International Exhibition of 1876 .....	242
Medical association. <i>See</i> American Medical Association.	
congress at Vienna Exhibition .....	169
matters, action relative to an international congress to consider.....	63
international congress at Vienna, for consideration of.....	249
Medicine, new group on, suggested by the Surgeon-General.....	19
Meeting of stockholders and corporators of Board of Finance.....	70, 86
proceedings of .....	70
list of directors elected at.....	70
( <i>See also</i> Centennial Board of Finance.)	
Meetings of the Commission, by-law relative to.....	61
place of.....	339
by-laws to be amended at.....	61
provision relative to .....	50, 53, 60, 61
notice of .....	53, 61
Members of commission of Vienna Exhibition, list of.....	117
committees of the Commission.....	63
the board in charge of the collective exhibition by the various Departments.....	369
Commission, .....	335, 336, 337
Memorandum-wrappers Vienna Exhibition, remarks relative to.....	122, 123
Memorial building, appropriation for, by Pennsylvania legislature.....	4
to be used by the Commission as a gallery of fine arts.....	4
authors of plan for.....	11
intentions in regard to .....	11
to be erected at the expense of Pennsylvania and Philadelphia.....	11
purposes of.....	11
to be open to the several States and foreign nations without discrimination, as a perpetual museum, &c.....	11
of International Exhibition of 1876, appropriations for .....	325
( <i>See also</i> Memorial hall.)	
Memorial hall, specifications for plans for.....	96
description of.....	16, 376
remarks on special features of.....	16
( <i>See also</i> Memorial building.)	
suggestions of Mr. Henry Pettit relative to .....	312, 317
suggestions as to the site of .....	312
Message from the President of the United States transmitting report of the Commission.....	1
Metal manufactures, group in classification of Vienna Exhibition .....	166
Metal-working machines, tools, and appliances, classification of.....	355
Metallurgical apparatus, classification of.....	355
products, classification of.....	344
Metallurgy, &c., place in classification of Vienna Exhibition.....	165
Metals and minerals of the United States, arrangements for a full representation of.....	5
classification of.....	344
Meteorological instruments and apparatus.....	360
Meteorology of Vienna .....	217
Method adopted to secure good designs for the Exhibition buildings .....	371
Methodical exhibition by large iron-works at Vienna Exhibition .....	175
Mexico, acceptance by, of invitation to participate in International Exhibition of 1876.....	3, 324
Michigan, amendment of report of executive committee relative to .....	34
Military bureau, Vienna Exhibition, remarks relative to.....	121
Military engineering, classification of.....	363
Military objects, place in classification of Vienna Exhibition.....	167
Millinery, classification of.....	353
Mineral acids, classification of.....	350
Minerals and metals, collection of specimens of, for the Exhibition.....	5
arrangements for securing exhibition of all the industries pertaining to .....	5
classification of .....	344
Miners and metallurgists, international congress of.....	249
Mines and mining, committee on.....	336
Mining engineering, classification of.....	362
interests, importance of the Exhibition to.....	5
machines, tools, and apparatus, classification of.....	355
quarrying, and metallurgy, place in the classification of Vienna Exhibition.....	165
Mining. <i>See</i> Committee on.	
Ministers of the United States abroad, circular-letter to .....	13
dispatches relative to Exhibition received from.....	4
Minutes of executive committee, how to be kept, &c .....	59
of meeting of the stockholders of the Board of Finance, reference to.....	29
Mirrors, classification of .....	354
Miscellaneous hand-tools, machines, and appliances used in various arts, cutlery, &c.....	356
Missionary effort, &c., place in the classification of objects illustrating.....	78
Mittens, &c., classification of.....	353
Models and designs used for architecture, classification of.....	364
Moneys of the Commission, by-law relative to payment of.....	61
how to be drawn .....	61
custody of, &c .....	99
only to be paid on appropriation, &c .....	99
Montgomery, Col. L. M., communication recommending, appointment as special agent at London.....	35



	Page.
Moral as well as material progress to be illustrated as far as possible in the Exhibition.....	78, 80
condition of man, place in the classification of objects, &c., illustrating efforts for the improvement of .....	6, 365
Morrell, Daniel J., commissioner for Pennsylvania, communication from, to the Governor of that State urging a State appropriation for the Exhibition.....	69, 84
elected to executive committee .....	56
member of executive committee .....	335
Mosaic work, classification of .....	364
Motors and apparatus for the generation and transmission of power, and for lifting and moving fluids..	356
and transportation, department assigned to, in classification .....	357
Munich Exhibition of 1854, materials of the buildings.....	317
Municipality of Philadelphia. <i>See</i> Philadelphia.	
Museums of fine arts applied to industry. place of representation of the influence of, in the classification of Vienna Exhibition .....	167
Music and the drama, classification of .....	368
at the Vienna Exhibition.....	218
importance of, at great exhibitions .....	219
at Sydenham palace.....	219
Musical instruments .....	361
place in classification of, Vienna Exhibition.....	167

## N.

Nails, classification of.....	354
Narcotic substances of vegetable growth, classification of.....	347
National Academy of Design, resolution relative to co-operation of.....	64
Fine Arts, offer of co-operation from.....	5
appropriation, necessity for, remarks of Director-General.....	12
banks throughout the country empowered to receive subscriptions and supplied with books and forms .....	325
Celebration Exhibition of 1876 referred to in acts of Congress as.....	93, 326
( <i>See also</i> International Exhibition of 1876.)	
character of the Exhibition, matters pertaining to, to be under the special control of the Commission, exclusive of the Board of Finance .....	101
domestic industry, place of in classification of Vienna Exhibition .....	167
economists, international congress of at Vienna.....	249
Government, remarks relative to appropriation by .....	71
( <i>See also</i> Congress, Appropriations, &c.)	
and international character of the Exhibition of 1876.....	326
reputation of the United States, as involved in the success of the Exhibition .....	3
Nations of the American continent and the Antilles, special efforts to induce co-operation of .....	14
Naval engineering, classification of .....	363
Necessity for an appropriation by Congress.....	4
Necessity of immediate subscriptions to stock of Board of Finance.....	33
Netherlands, acceptance by, of invitation to participate in International Exhibition of 1876.....	324
the Government of, officially accepts the invitation to participate in the Exhibition.....	3
New Hampshire, action of the legislature of, relative to the Exhibition .....	7
amendment of report of executive committee relative to.....	34
communication from Secretary of State of.....	57
New Jersey, amendment of report of executive committee relative to.....	34
resolutions by the legislature of, relative to Congressional aid to the Exhibition.....	7
Newspaper establishment in Vienna Exhibition, remarks relative to .....	206
New York Exhibition of 1853, area and cost of .....	150
extent of .....	272
Nitro-glycerine, classification of .....	352
Nomination of secretaries of departments, by-law relative to.....	54
proceedings relative to.....	54, 62
committee on .....	336
provision relative to.....	61
North Carolina, acknowledgments to legislature of .....	69
resolutions by the legislature of, indorsing the Exhibition and urging an appropriation by the General Government.....	7, 69, 73
Mecklenburgh Declaration, reference to in resolutions of the legislature of North Carolina relative to the Internatinnal Exhibition .....	73
letter from Governor of, inclosing resolutions of the general assembly .....	73
Northern Pacific Railroad, communication from, proposing to exhibit samples of the productions of the country traversed by the road, &c.....	90
Nostrums, regulation relative to.....	25
Notation of the classification, changes in.....	30
Note of invitation sent by Secretary of State to foreign ministers accredited to the United States.....	322
Notice of special meetings, provision relative to .....	60
Number of the officers Vienna Exhibition, remarks relative to.....	119
of exhibitors at Vienna Exhibition .....	227
of men employed in the construction of buildings for the Vienna Exhibition.....	143
of visitors to Paris Exhibition of 1867.....	224
approximate statement and classification of.....	225
Numbering of yarn, international congress at Vienna for consideration of.....	248, 249
tables relative to.....	254, 256

## O.

Objects illustrating efforts for the improvement of the condition of man, place of, in the classification..	6
Observations on great exhibitions, by Dr. Exner .....	272
Offers of co-operation from agricultural societies, the Department of Agriculture, &c .....	5
in agricultural department of the Exhibition.....	90
with the Commission.....	5

	Page.
Office-furniture, classification of .....	354
Office of the Commission, organization of .....	2
of executive commissioner. <i>See</i> Executive commissioner.	
of executive commissioner abolished .....	58
Officers and members of the Commission .....	355
election of, proceedings on by-laws .....	46
of colleges, &c., address to .....	69
of committees, elected .....	67
of executive committee .....	59
of the Board of Finance, election of .....	86
<i>(See also Centennial Board of Finance.)</i>	
of the Commission .....	22
by-law relative to .....	59, 98
election of .....	55
provided for .....	98
proceedings in reference to election of .....	45
of Centennial Board of Finance .....	337
of the committees .....	66
of the General Government, address to .....	81
duties of, as representatives of the people .....	81
of the governments of the several States, address to .....	81
duties of, as representatives of the people .....	81
of Vienna Exhibition, privileges extended to .....	113
special arrangement as to salaries of .....	113
Official catalogue of Vienna Exhibition, remarks relative to .....	201, 202
to be published by the Commission .....	23
to be in four languages .....	23
title of Commission .....	59, 97
of Exhibition .....	59, 97
Oils, classification of .....	351
Oleaginous substances of vegetable growth, classification of .....	347
Omnibuses at Paris Exhibition of 1867, number of lines of .....	157
table showing increase of receipts of .....	158
comparison of profits of, with other periods .....	158
Opening and closing of International Exhibition of 1876, date of .....	82, 323
ceremonies of International Exhibition of 1876, committee on .....	336
<i>(See also Committee on opening ceremonies.)</i>	
Order of business, as reported from the committee on by-laws .....	99
the President relative to a collective exhibition by the Executive Departments, the Department of Agriculture, and the Smithsonian Institution .....	12, 368
Oregon, amendment of report of executive committee relative to .....	34
liberality of, commended by the Commission .....	64
Ores, classification of .....	344
Oriental nations, executive committee requested to take measures to secure a representation of the industries, &c., of .....	62
Origin and organization of the Vienna Exhibition .....	111
Organization, administration, and results of the Vienna International Exhibition of 1873, report of the special agent W. P. Blake .....	109
<i>(See also Vienna Exhibition of 1873, W. P. Blake, &amp;c.)</i>	
of Board of Finance .....	70
rules relative to .....	69
resolution commending promptness of .....	62
of juries at Vienna Exhibition, regulation for .....	229
of Paris Exhibition of 1867, remarks relative to .....	123-124
commission for arboricultural exposition .....	124
committee of weights, measures, and coins .....	124
on ventilation .....	124
upon the exposition of musical works .....	124
remarks relative to .....	123, 124
subscribers to the guarantee fund .....	124
imperial commission .....	124
committees of the imperial commission .....	124
commissioner-general .....	124
foreign commissions .....	124
jury of new order of recompenses .....	124
jury upon fine arts, agriculture, and industry .....	124
associate members and substitutes .....	124
authors and editors of the reports of the jury .....	124
committees of admission .....	124
bureaus of the committees of admission .....	124
jury of admission of works of art .....	124
commission upon the history of labor .....	124
jury of admission for the gallery of history of labor .....	124
jury upon alimentary establishments .....	124
installation syndicates .....	124
residents and secretaries of department committees .....	124
commission for the exposition of agriculture .....	124
commission for the horticultural exposition .....	124
committee upon yachts, and experiments in salvage, number of .....	124
commission for encouraging study by workmen, number of .....	124
miscellaneous, number of .....	124
architects engaged in the erection of the trophies in the hall of the distribution of prizes, number of .....	124
co-operating exhibitors in the exhibition of the history of labor, number of .....	124
committee upon finance and auditing the accounts .....	124



	Page.
Organizations, commercial, industrial, and scientific, circular address to.....	82
Ornaments for the person, classification of .....	352, 353
Orr, Hon. James L., commissioner from South Carolina, action relative to death of .....	34, 53
Outside constructions at Vienna Exhibition, remarks on .....	136
list of, &c .....	137
ground for exhibition purposes Vienna Exhibition, remarks relative to .....	132
spaces allotted in .....	132

**P.**

Packages of goods for exhibition sent from foreign countries, regulations as to labels, &c .....	24, 25
address of .....	24
Packer, Asa, elected chairman of committee on finance .....	66
member of committees on plans and architecture and finance .....	336
Packing of goods for exhibition, regulations concerning .....	25
Painting, place of, in the classification .....	6, 363
Paints, classification of .....	351
Palace, table showing area assigned to, at Paris Exhibition of 1867 .....	135
Palm-leaf hats, classification of .....	353
Pamphlet containing full information of the nature and purposes of the Exhibition, and embracing the best things said upon the general subject of international exhibitions, preparation of, for public distribution, suggested by H. D. J. Pratt .....	89
Paper, classification of .....	353
Paper building-material and for general construction, classification of .....	353
currency and stock values, international congress at Vienna for the consideration of .....	249
industry generally, classification of .....	353
making machines and implements, classification of .....	355
manufactures, place in classification of Vienna Exhibition .....	166
Papers, accompanying the report to the President .....	8
drawings, illustrations, &c., accompanying report of Henry Pettit, special agent to Vienna, list of .....	309
Paper-working machines and apparatus, classification of .....	355
Paris Exhibition of 1855, extent, cost, and receipts of .....	272
remarks of Henry Pettit in reference to buildings of .....	297
description of buildings of .....	297
table showing cost of buildings of .....	298
tables showing comparison of receipts from visitors at, with those at other exhibitions .....	225
1867, annular spaces in the building .....	141, 142
spaces assigned to groups, &c .....	141, 142
area of grounds inclosed .....	131
area of surface assigned to each country in .....	136
outside structures at .....	136
commission upon the history of labor, number of .....	124
for the exposition of agriculture, number of .....	124
for the horticultural exposition, number of .....	124
for the arboricultural exposition, number of .....	124
for encouraging study by workingmen, number of .....	124
distribution of prizes of .....	239
number of awards .....	240
demolition of the building .....	318
effect of, upon receipts of railways .....	157
expenditures of Great Britain at .....	128
Prussia at .....	128
Egypt at .....	128
Austria at .....	128
extent, cost, and receipts of .....	272, 301
extract from a letter of Hon. William H. Seward transmitting to Congress the report on .....	328
financial basis of, &c .....	3
residents and secretaries of department committees, number of .....	124
architects engaged in the erection of the trophies in the hall of the distribution of prizes, number of .....	124
co-operating exhibitors in the exhibition of the history of labor, number of ..	124
jury of new order of recompense, number of .....	124
upon fine arts, agriculture, and industry, number of .....	124
fine arts, agriculture, and industry, (associate members and substitutes,) number of .....	124
admission of works of art, number of .....	124
admission for the gallery of history of labor, number of .....	124
upon alimentary establishments, number of .....	124
authors and editors of the reports of the jury, number of .....	124
materials used in construction .....	317
number of omnibus lines of .....	157
table showing receipts of omnibus lines for 1867 as compared with 1866 and 1868 .....	158
number of visitors at the hotels of the city before, during, and after .....	211
receipts of theaters as affected by .....	211
number of visitors to .....	224, 225
passages in .....	141
police arrangements at .....	191
receipts and expenses of the commissioners of .....	2
receipts from visitors .....	128
reception of goods at .....	164
record of installation .....	182
regulations for installation at .....	177
advantages of the classification of, over that of the Vienna Exhibition .....	177

	Page.
Paris Exhibition of 1867, remarks relative to reports of .....	204
organization of .....	123, 124
subscribers to the guarantee fund, number of .....	124
imperial commission, number of .....	124
committees of imperial commission, number of .....	124
of admission, number of .....	124
of weights, measures, and coins, number of .....	124
on ventilation, number of .....	124
upon the exposition of musical works, number of .....	124
on yachts, and experiments in salvage, number of .....	124
upon finance and auditing the accounts, number of .....	124
commissioners-general, number of .....	124
foreign commissions, number of .....	124
installation syndicates, number of .....	124
table showing different modes of transport of visitors of .....	158
area of Champs de Mars .....	300
distribution of area under roof .....	300
area of park and reserved gardens around the industrial palace .....	300
the island of Billancourt .....	300
time occupied in building .....	300
table showing cost of building .....	300
areas assigned to different parts of .....	135
cost of printing at .....	206
comparison of receipts from visitors at, with those of other ex- hibitions .....	225
cost of building of .....	149
number of members of international jury .....	234
duties of juries at .....	235
table showing number of exhibitors in various groups .....	229
Park. <i>See</i> Fairmount Park.	
table showing area assigned to, at Paris Exhibition of 1867 .....	135
Commission of Philadelphia. <i>See</i> Commissioners of Fairmount Park.	
Parlor furniture, classification of .....	354
Parsons, William Henry, elected to executive committee .....	56
member of executive committee .....	336
committee on plans and architecture .....	336
remarks of .....	39
Passage-ways in the Paris Exhibition of 1867, remarks on .....	141
Passengers and freight, comparison of receipts from, on railroads of Austria, showing increase of 1873 over 1872 .....	156, 157
transportation of, at Vienna Exhibition, regulations relative to reduction of fares .....	150, 156
Past international exhibitions, liberality of foreign governments to .....	3
( <i>See also</i> Paris Exhibition, London Exhibition, Vienna Exhibition, &c.)	
Pasteboard, classification of .....	353
Patent Congress at Vienna Exhibition .....	169, 258
medicinal compounds, classification of .....	351
medicines, regulation relative to .....	25
protection, international congress to discuss the question of .....	259
Patents, international congress at Vienna for consideration of .....	249, 258, 259
Patterson, Mr. Joseph, remarks of .....	40
Paul, J. M., elected secretary of committee on finance .....	66
Pavilion for imperial visitors, Vienna Exhibition, description of .....	149
Payment of installments upon stock, rules relative to .....	69
Peltries, classification of .....	349
Pennsylvania, appropriation by, for International Exhibition of 1876, amount of .....	325
subscriptions in .....	325
board of State Supervisors invited to meet the Commission .....	35
letter of Daniel J. Morrell, commissioner for, to Governor Hartranft urging a State ap- propriation .....	84
liberality of, commended by the Commission .....	64
liberality of .....	4
subscriptions in, to stock of Board of Finance .....	4
meeting of executive committee with legislature of .....	68
acknowledgments to the Governor of .....	68
Governor of, commends the Centennial Celebration in inaugural .....	68
meeting of executive committee with Senate and House of Representatives of .....	68
interview with Governor of .....	68
efforts to obtain an appropriation from .....	68
Pennsylvania Centennial Committee, conference with .....	68
supervisors of State appropriations. <i>See</i> Board of Supervisors of Pennsylvania.	
People of the United States, address to .....	69, 77
responsibility of, for the success of the Exhibition .....	77
Perfumery, classification of .....	351
Perfumes from vegetables, classification of .....	347
Permanent Centennial Exhibition building. <i>See</i> Memorial building, &c.	
Exhibition in Hanover .....	277
exhibitions, remarks on .....	275
museum, donations to, by various persons abroad, through the special agent, W. P. Blake .....	270, 271
museums, usefulness of .....	276
history of .....	276
observations on .....	277
Persons eminent in various professions, submission of copies of classification to, for criticism, &c. ....	89
Petition and communication recommending the appointment of Col. L. M. Montgomery as special agent of the Commission at London .....	35
Pettit, Henry, sent to Vienna as special agent .....	69
gives his services gratuitously .....	69
communication to the chairman of the executive committee accompanying report of .....	279
communication from, presenting his final report .....	295



	Page.
Pettit, Henry, final report of .....	295
report of .....	2
suggestions and recommendations of, as to the position of the buildings for the Exhibition of 1876, the treatment of the grounds, &c. ....	311, 313
submission of report of .....	56
report of, referred to executive committee .....	56
Peyton, Col. Bailey, resolution of thanks to .....	64
Pharmaceutical preparations, classification of .....	351
Philadelphia, amount of appropriation by, for International Exhibition of 1876 .....	325
appropriates half a million dollars .....	325
large subscription by the citizens of .....	325
action of the people of in regard to subscriptions .....	93
thoroughly canvassed, &c .....	93
appropriates \$50,000 to the Commission .....	91
liberality of .....	48, 68
Centennial Finance Committee. <i>See</i> Citizens' Centennial Finance Committee of Philadelphia.	
committee of women of. <i>See</i> Women's Centennial Executive Committee.	
Councils. <i>See</i> Councils of Philadelphia.	
International Exhibition of 1876 to be held at Fairmount Park .....	323
pumping and storage capacity of Belmont Reservoir at .....	290
Philosophy of progress as developed in America, paper on, by John L. Campbell, secretary of the Commission .....	333
Photographs at Vienna Exhibition, remarks relative to .....	208
tariff of, for exhibitors .....	208
Photographs, &c., of articles exhibited, regulations relative to .....	25
of plans for Exhibition building annexed to the report to the President .....	8
Photography, classification of .....	364
Physical condition of man, place in the classification of objects, &c., illustrating efforts for the improvement of .....	6, 365
Piers, classification of .....	363
Pigments, classification of .....	351
Place of meeting of the Commission .....	339
Plan for the buildings, method taken to secure .....	97
to be adopted by the Commission and estimates submitted to Board of Finance ..	101
of the main Exhibition building, explanation of .....	15
Plans adopted, advantages of .....	373
annexed to the report to the President .....	8
and architecture, action relative to .....	29
( <i>See also</i> Committee on plans, &c.)	
report of committee on, adopted .....	31
committee on .....	336
consideration of report of committee on .....	31
resumed .....	31
report of committee on, for Exhibition of 1876 .....	369
( <i>See also</i> Committee on.)	
and books in reference to Paris Exhibition of 1867, list of, accompanying report of Henry Pettit.	302
for art gallery of Exhibition, resolution relative to enlisting co-operation of National Academy of Design in preparing .....	64
buildings of the Exhibition of 1876, adoption of, reserved to the Commission .....	70
specifications for .....	96
regulations relative to competition for .....	370
list of competitors for .....	370
resolution relative to submission of, to the Board of Finance .....	31
submitted to the President and Congress .....	11
authors of those accepted .....	11
Plastic and graphic arts, place in the classification .....	6
arts, classification of .....	363
Plumbers' hardware, classification of .....	354
Police bureau, Vienna Exhibition, remarks relative to .....	121
Pomades, classification of .....	351
Popular education, literature, and history, committee on .....	336
( <i>See also</i> Committee on history, literature, and popular education.)	
Porcelain, classification of .....	351
Post-office of Vienna Exhibition .....	189
Postal service of Vienna Exhibition .....	189
Potash, classification of .....	350
Powder, classification of .....	352
Powers and duties of executive committee .....	59
of vice-presidents .....	60
Pratt, Henry D. J., letter from, to Chief of Ordnance, relative to the classification .....	377
remarks of, upon the importance of taking measures to inform the public of the nature and purposes of the Exhibition, &c .....	89
suggests the preparation of a pamphlet containing full information for distribution ..	89
report of .....	89
executive commissioner completed by .....	69
submits copies of the classification to persons eminent in various professions, for criticism and amendment .....	89
Preamble to act of Congress creating Commission to conduct Exhibition of 1876 .....	338
Precautions against loss or damage of goods exhibited .....	24
Precedence of vice-presidents, &c .....	60
Preliminary sketches of designs for the Exhibition buildings invited .....	97
Prehistoric relics, place of, in the classification .....	90
communication from Dr. Abbot relative to .....	90

	Page.
Premiums for articles exhibited, &c., to be fixed by the Commission, with the advice of the Board of Finance .....	71, 101
to be paid for the best ten designs presented .....	97
Preparation for the establishment of atheneums, and increasing the usefulness of the Exhibition, remarks on .....	117
Preparations for exhibition .....	275
Preserved meats, classification of .....	349
vegetables and fruits, classification of .....	349
President of Centennial Board of Finance, notification of election of Mr. John Welsh .....	34
the Commission .....	22, 335
by-law relative to, as reported from committee on by-laws .....	100
address of .....	27, 55
by-law concerning, taken up .....	53
proceedings relative to .....	53
powers and duties of .....	50, 53, 54
committees named by .....	63
election of Joseph R. Hawley .....	55
committee to conduct to chair .....	55
election of, declared unanimous .....	55
<i>ex officio</i> member of committee, &c. ....	54
method of election, &c. ....	59
by-law relative to .....	59, 60
powers and duties of .....	50
provided for .....	98
election of .....	98
report of, to the President of the United States .....	2
to be exempt from serving on committees .....	50
of the United States, action of foreign governments in response to the invitation of. ....	3
address on behalf of, by the Hon. George M. Robeson .....	322
executive order by, relative to a collective exhibition by the Executive Departments, the Department of Agriculture, and the Smithsonian Institution. ....	368
list of papers accompanying the report to .....	8
report of the Commission to .....	2
duty of the Commission to report to .....	2
message from, transmitting report of the Commission .....	1
order by, relating to a collective exhibition by the Executive Departments, the Department of Agriculture, and Smithsonian Institution. ....	21
proclamation of, announcing time and place of holding the International Exhibition of 1876, and commending the same. ....	321
various reports of the Commission to .....	2
to make proclamation, &c. ....	339
views of, relative to the propriety of holding an international exhibition in 1876. ....	1
views of, as to site selected for Exhibition .....	1
of Women's Executive Committee .....	7
recognition of Mrs. E. D. Gillespie as .....	70
Presiding officer of the Commission, provision relative to .....	50, 53, 60
(See also President of the Commission, &c. )	
Press, thanks of the Commission tendered to the representatives of .....	67
bureau Vienna Exhibition, remarks relative to .....	120
Pressing-machines and apparatus, classification of .....	355
Price of labor in Vienna during the exhibition .....	143
Price, the Hon. Eli K., assists the executive committee .....	68
Prince Bismarck recommends the Exhibition to the German Parliament .....	3
of Saxe-Coburg, description of special exhibition by, at Vienna Exhibition .....	171
Principal buildings required for the Exhibition, list of .....	373
industrial building for the Exhibition, description of .....	15
(See also Main pavilion, International Exhibition of 1876, &c.)	
Printing and publishing in connection with Vienna Exhibition, remarks upon the importance and description of .....	199
at Paris Exhibition of 1867, table showing cost of .....	206
establishment in Vienna Exhibition, remarks relative to .....	206
inks, classification of .....	351
of the journal, &c., of the Commission .....	93
machines and apparatus, classification of .....	355
Private dwelling-house, place in classification of Vienna Exhibition .....	167
Privilege of the floor extended to the Hon. William D. Kelley .....	50
Privileges of exhibitors at International Exhibition of 1876, granted only to citizens of countries whose governments have formally accepted invitation to be represented, and appointed Commission ..	323
Prize medals at Vienna Exhibition, competition for a design for .....	248
prizes for a design for .....	248
and awards, consideration of the utility, &c , of .....	242
for articles exhibited, &c., to be fixed by Commission .....	101
for treatises on questions of international law, &c. ....	62
medals, &c., at international exhibitions, benefits arising from the awarding of .....	329
remarks relative to distribution of .....	239
number of awards of, at Paris Exhibition of 1867 .....	240
at Vienna Exhibition .....	240
table showing number of awards to various nations at Vienna Exhibition .....	240
special regulations relative to, to be issued .....	26
to workmen at Vienna Exhibition .....	246
Proceedings, executive committee to report .....	60
relative to director-general .....	60
in reference to by-laws .....	45, 46, 47, 48
of the Commission at third session, May, 1873, index to journal of .....	102
of the various international congresses at Vienna .....	249, 258, 265
relative to payment of moneys .....	61



	Page.
Proceedings relative to Women's Centennial Executive Committee.....	48
Processes, classification of .....	355
machines, &c., place in the classification .....	6
representation of, in exhibitions .....	275
Proclamation by the President of the United States announcing time and place of holding the International Exhibition of 1876, and commending the same.....	321
Products and industries of the country, favorable exhibit of, assured.....	5
for competition, regulation relative to.....	23
&c., of China and Japan, measures to secure representation of, in Exhibition.....	62
of the forest, classification of.....	346
of the soil. <i>See</i> Committee on agriculture and live-stock.	
( <i>See also</i> Committee on products of the soil, &c.)	
Programme of the Vienna International Yarn Congress.....	249
Programmes of Vienna Exhibition, remarks relative to .....	200
Progress, moral and intellectual, as well as material, to be illustrated by the Exhibition .....	78, 80
paper by John L. Campbell, secretary of the Commission, on the philosophy of, as developed in America .....	333
of subscriptions to the stock of the Board of Finance .....	4
of the work in Tennessee.....	53
of the work of the Commission, reports upon.....	2
Promotion of science, institutions, &c., for classification of .....	367
Promptness of organization of Board of Finance and Pennsylvania Supervisors, commended.....	62
Proportions of the main industrial building proposed.....	15
Prussia, expenditures of, at Paris Exhibition of 1867.....	128
Pruyn, John V. L., remarks of.....	41
Public works, classification of.....	362, 363
place in the classification of objects illustrating .....	6
Publishing bureau Vienna Exhibition, remarks relative to .....	120
and printing in connection with Vienna Exhibition, remarks upon the importance and description of.....	199

## Q.

Quarrying, &c., place in classification of Vienna Exhibition .....	165
Quartermaster-General, communication from, inclosing list of articles to be exhibited.....	19
Quay, table showing area assigned to, at Paris Exhibition of 1867.....	135
Questionary for exhibitors at Vienna Exhibition, form of .....	237
Quorum of executive committee .....	59
the Commission, what constitutes.....	98
Quota of stock allotted to each State—how far to be regarded.....	77

## R.

Radford, George Kent, one of the authors of the accepted plan.....	11
Railroad companies, committee on transportation instructed to arrange with, as to increased facilities in 1876.....	58
Railroads of Austria, table showing increase of passengers and freight, from January to June, 1873, over same period for 1872.....	156, 157
Railway communication with the Vienna Exhibition .....	305
and city communication with Vienna Exhibition, description of, and remarks on.....	291-293
engineering, classification of.....	363
facilities to Fairmount Park, remarks on the importance of, to the success of the Exhibition.....	91
Railway rolling-stock and apparatus .....	357
Railways and railway-plant, classification .....	357
Railways, effect of an International Exhibition upon receipts of, as shown in report of Paris Exhibition of 1867.....	157
effect of Paris Exhibition of 1867 upon receipts of .....	157
increase of travel on, during Vienna Exhibition.....	156, 157
Randall, Hon. Samuel J., remarks of.....	41
Rates of admission at Vienna Exhibition .....	212
Raw materials, place assigned to, in the classification.....	6, 344
Read, George, of Delaware, Life and Correspondence of, copy presented to Commission.....	34
Read, William T., commissioner from Delaware, death of .....	33
Reading and writing room, Vienna Exhibition.....	188
Receipts and expenditures of the Commission, account of.....	99
expenses of the great exhibitions of the world .....	272
French commissioners of exhibition of 1867.....	2
Receipts at International Exhibition of 1862.....	128
Paris Exhibition of 1867.....	128
Vienna Exhibition .....	144
Vienna Exhibition from visitors .....	127, 214
Reception and delivery of goods at Vienna Exhibition .....	163, 165
Reception of visitors arriving by carriages at the Vienna Exhibition.....	161
Recommendations of the President of the United States relative to the Exhibition.....	1
Reduction of fares for goods and passengers at Vienna Exhibition, regulations relative to.....	150-156
Regulation of the Danube, Vienna Exhibition, remarks relative to .....	129
Regulations and arrangements for the convenience of visitors .....	183
for foreign exhibitors, &c.....	22, 323
the Exhibition, remarks relative to .....	89
the formation of the Exhibition, preparation of.....	2
of International Exhibition of 1876 .....	323
of International Exhibition of 1876, sent officially to foreign governments, with note communicating the President's proclamation.....	324
provision for amendment of .....	26

	Page.
Regulations for carriages, public and private, at Vienna Exhibition .....	161
relative to inflammable and explosive articles .....	25
Relative rights and duties of the Commission and the Board of Finance, report on .....	31
Religious associations of the United States, address to .....	69
element in our life as a people to be shown in the Exhibition .....	79
organizations and systems, group on .....	78
remarks relative to .....	78
systems and sects, origin, growth, &c., class devoted to objects illustrating .....	78
remarks on the opportunity of, to illustrate their growth, &c .....	78
Remarks on the necessity of governmental appropriations for international exhibitions .....	2
application of, to Exhibition of 1876 .....	3
on the work of the Commission .....	7, 71
upon the importance of time in connection with the Exhibition .....	79
(See Circular; Communication; Address, &c.)	
Removal of goods exhibited, regulation relative to .....	23, 26
Re-organization of the Commission, suggestion relative to .....	70
Repeal of resolution creating office of executive commissioner .....	54, 58
Report bureau, Vienna Exhibition, remarks relative to .....	120
of committee appointed to confer with Women's Centennial Committee .....	48
proceedings relative to ..	48
wait on directors Centennial Board of Finance .....	35
on by-laws .....	97
consideration of, postponed .....	31
plans and architecture, consideration of, resumed .....	31
by-laws, proceedings relative to .....	45, 46, 47, 48
credentials .....	28
proceedings in reference to .....	35, 38, 42, 43
relative to Franklin C. Johnson as alternate commissioner from Indiana .....	36
of conference of the Commission and Board of Finance .....	101
on plans and architecture .....	94
for Exhibition of 1876 .....	369
action relative to .....	31
adopted .....	31
relative to the Exhibition buildings, preparation of the ground, advertis- ing for plans, &c .....	29
consideration of, postponed .....	29
on drainage and sanitary fittings at Vienna Exhibition .....	195
of the executive committee .....	68
acceptance of .....	28
amendment of .....	34
Henry Pettit, special agent to Vienna Exhibition .....	295
list of papers, drawings, &c., accompanying ..	309
on the site, buildings, &c., of the exhibition ..	279
H. D. J. Pratt .....	89
special agent to Vienna, remarks relative to organization of Paris Exhibition of 1867 .....	123, 124
the Commission, of November, 1872, referred to .....	2
of February, 1873, referred to .....	2
to the President of the United States .....	1, 2
list of accompanying papers .....	8
Director-General .....	11
list of papers accompanying .....	8
secretary of the Commission .....	91
W. P. Blake as executive commissioner, completed by H. D. J. Pratt .....	69, 89
special agent to Vienna, on the organization, administration, and results of the Vienna Exhibition .....	29, 109
special agent to Vienna, action relative to .....	30
table of contents to .....	110
inclosures to .....	110
(See also Vienna International Exhibition; W. P. Blake, &c.)	
Women's Executive Committee, read and adopted .....	30
submitted to Congress in February, 1873, proceedings since .....	2
Reports for the working classes Vienna Exhibition, remarks relative to .....	205
from the several States, proceedings relative to .....	53
from the various States, as to subscriptions, indefinitely postponed .....	58
of executive commissioner, subjects referred to in last two, list of .....	89, 90
abstract of .....	90
committee, when to be presented .....	59
international exhibitions, importance of expedition in publication of .....	204
Paris Exhibition of 1867, remarks relative to .....	204
the jury, Paris Exhibition of 1867, number of editors and authors of .....	124
the special agents of the Commission sent to the Vienna Exhibition referred to .....	2
Vienna Exhibition, remarks relative to .....	204
on groups in international exhibitions, importance of early provision for .....	244
upon Vienna Exhibition, list of .....	20
Representation of processes at great exhibitions .....	275
the influence of museums of fine arts applied to industry, place of, in classification of Vienna Exhibition .....	167
Representatives in Congress requested by various State legislatures to aid the Exhibition .....	7
Reproduction of articles exhibited, regulation relative to .....	25
Republic of Ecuador, appointment of a commissioner resident by .....	4
Residents and secretaries of department committees of Paris Exhibition of 1867, number of .....	124
Resolution appointing a committee to attend convention of Governors at Atlanta .....	67
authorizing committee on arts and sciences to enlist co-operation of the National Academy of Design .....	64
authorizing the committee on plans and architecture to proceed at once to secure suitable plans .....	95
commending the action of Pennsylvania, Tennessee, and Oregon .....	64



	Page.
Resolution creating office of executive commissioner repealed.....	54
directing secretary to notify Governors of vacancies.....	56
in reference to American Medical Association.....	44
inviting members of the Board of Supervisors of the State of Pennsylvania to seats in the Commission.....	45
of acknowledgment, &c., to Women's Centennial Executive Committee.....	56
requesting commissioners to form similar associations in their respective States and Territories of stockholders of Board of Finance authorizing directors to fill vacancies in their own body of thanks to W. P. Blake.....	56
Col. Bailey Peyton.....	64
Hon. Henry S. Foote.....	64
Pennsylvania Board of Supervisors.....	62
Centennial Board of Finance.....	62
relative to American Medical Association.....	63
an international medical congress.....	63
Board of Finance.....	64
co-operation of various bodies with the Commission.....	62
executive commissioner repealed.....	58
limitation of time of occupying the floor made an article of the by-laws.....	62
report of the committee on plans and architecture.....	31
concurrence of Board of Finance in a plan for the buildings referred to executive committee.....	32
relative rights and duties of the Commission and the Board of Finance.....	31
nomination of secretaries of departments made a by-law.....	54
securing the concurrence of Board of Finance in the plans referred to executive committee.....	32
instructing executive committee to deliver books, &c., to Board of Finance.....	32
submission of plans for buildings to the Board of Finance referred to executive committee.....	31
subscription-books.....	65
Women's Executive Committee.....	30
inviting Board of Finance to seats on the floor.....	30
requesting commissioners to communicate with Board of Finance.....	65
furnish information to secretary.....	58
instructing secretary to obtain information of commissioners.....	58
committee on classification as to prominence to be given to industrial interests.....	58
requesting executive committee to take measures to secure a representation of the industries of China and Japan.....	62
issue the addresses to the people already adopted, &c.....	66
to refer report of W. P. Blake to the executive committee and publish portions of it.....	30
Resolutions by various legislatures calling upon Congress to aid the Exhibition.....	7
of the legislature of North Carolina urging an appropriation to the Exhibition by the General Government.....	73
Tennessee urging an appropriation in aid of the Exhibition by the General Government.....	72
of various legislatures commending the celebration, &c.....	69
relative to the death of William T. Read, commissioner from Delaware.....	34
upon the death of the Hon. James L. Orr.....	53
relative to the Women's Centennial Executive Committee.....	48
urging necessity of immediate subscription, introduction of.....	33
action relative to.....	33
Responses to the invitation to foreign nations to participate in the Exhibition.....	12
Resting-places in exhibitions, importance of.....	275
great exhibitions, of two kinds, from mental work and from physical exertion.....	275
Results, &c., of the Vienna Exhibition, report relative to.....	109
Revenues of the Exhibition, matters concerning, to be primarily under the control of the Board of Finance.....	101
Review of the work accomplished to May 1, 1873.....	93
Rights and duties of the Commission and Board of Finance, communication relative to.....	67
Robeson, the Hon. George M., Secretary of the Navy, address by, on behalf of the President.....	322
Rotunda of the Vienna Exhibition, number of visitors to.....	220
view from the lantern of.....	220
effect of.....	142
acoustic properties of interior of.....	145
cost of.....	148
table showing dimensions of, compared with other domes.....	149
weight of iron-work of.....	303
(See Dome, Vienna Exhibition, &c.)	
Rolling-chairs, Vienna Exhibition.....	189
Rule relative to books of subscription to stock of the Board of Finance.....	75
Rules as to subscriptions, &c.....	83
for exhibitors, to be made by Commission.....	101
for the first competition for plans for the Exhibition buildings.....	97
of executive committee, power to make, &c.....	59
relative to organization of Board of Finance.....	69
Rolling-machines and apparatus, classification of.....	355
Rulings of the Commission to be followed by executive committee.....	59
Russell, Scott, suggestions of, in regard to buildings of Centennial Exhibition of 1876.....	293
views of, on buildings for great exhibitions.....	315
Russia, appropriation by, to secure representation in Vienna Exhibition.....	128
remarks relative to Russian special catalogue of Vienna Exhibition.....	203
table showing area of ground allotted to, at Vienna Exhibition.....	134

## S.

Safety of goods exhibited in transportation, placing in building, and disposing of after close of Exhibition, remarks on.....	275
Sale of articles exhibited, regulation relative to.....	25
Salaries of officers and employes of the Commission to be paid monthly.....	99
Salt, classification of.....	350



	Page
Sandwich Islands, acceptance by, of invitation to participate in Exhibition of 1876.....	324
Sanitary and police regulations at Vienna commended .....	267
arrangements at Vienna Exhibition, remarks relative to.....	290
bureau, Vienna Exhibition, remarks relative to.....	121
classification of.....	365
fittings and drainage at Vienna Exhibition, report on .....	195
Saponaceous substances of vegetable growth, classification of.....	347
Saunders, Mr. William, appointment of, by the Department of Agriculture upon the board of management of the collective exhibition by the Executive Departments, &c.....	369
Sawyer, the Hon. F. A., appointment of, by the Secretary of the Treasury upon the board of management of the collective exhibition by the various Departments, &c .....	369
Schwarz-Senborn, the Baron, director-general of Vienna Exhibition, acknowledgments by special agent to Vienna to.....	109
remarks relative to .....	117, 118, 119
Schools and colleges of the United States, address to the officers and teachers in.....	80
Science, influence of, on the progress and development of manufactures, &c.....	168
(See also Committee on arts and sciences.)	
and the arts, importance of great international exhibitions to, as stated by Dr. Whewell and Sir David Brewster .....	80
of fish-culture. See Fish-Culture.	
Sciences. See Committee on arts and sciences.	
and arts, committee on.....	336
Scientific instruments, place in classification of Vienna Exhibition .....	167
organizations, co-operation of invited .....	82
Scope of the Exhibition.....	6
Screws, classification of.....	354
Sculpture, classification of.....	363
place of, in the classification .....	6
Seats for visitors, Vienna Exhibition .....	188
Secretary directed to obtain information of commissioners.....	58
election of John L. Campbell.....	55
(See Temporary secretary.)	
of committee on education, J. F. Williams, elected.....	66
manufactures, George A. Crawford, elected.....	66
finance, J. M. Paul, elected .....	66
tariffs and transportation, D. M. Boyd, jr., elected.....	66
of State, announcement by, of the members of the board appointed by the President to superintend the preparation of a collective exhibition by the Executive Departments, &c.....	369
communication to, from the Director-General relative to collective exhibition by the Departments.....	17
extract from a letter of William H. Seward as, transmitting the United States report on Paris Exhibition of 1867 to Congress .....	328
form of note sent by, to foreign ministers, relative to the Exhibition of 1876.....	322
informs the Commission of the official acceptance by certain governments of the President's invitation to participate in the Exhibition.....	3
letter of, to the Secretary of War relative to an exhibition by the Executive Departments of the Government.....	378
invitation sent to foreign ministers by .....	322
of New Hampshire, communication from .....	57
Secretary of War, letter of, to the Secretary of State relative to the part to be taken in the Exhibition by the Executive Departments.....	379
Secretary of the Commission.....	22, 335
directed to notify Governors of vacancies in the Commission .....	56
duties of.....	99
to nominate assistants.....	99
mode of election, &c.....	59
by-law relative to .....	59
powers and duties of.....	61
to make report, &c .....	61
provided for.....	98
by-law concerning.....	98
election of.....	98
report of .....	91
Secretary of the Light-House Board, communication from, relative to space required .....	20
Secretary of the Treasury to prepare the certificates of stock of Centennial Board of Finance .....	326, 342
Secretaries of departments, committee on nomination of.....	336
proceedings relative to nomination of .....	54
to be selected.....	61
duties of.....	61
Secretaries and residents of department committees of Paris Exhibition of 1867, number of .....	124
Second vice-president Centennial Board of Finance, notification of election of William H. Appleton..	35
Sellers, Mr. William, notification of election of, as first vice-president Centennial Board of Finance..	34
William, vice-president Board of Finance .....	338
Senate of Pennsylvania, meeting of executive committee with .....	68
of the United States, message of the President to, transmitting report of the Commission .....	1
Senators and Representatives of various States requested to promote the success of the Exhibition....	7
Seward, William H., extract from a letter of, communicating to Congress the United States report on the Paris Exposition of 1867.....	328
Sewerage and drainage at Vienna Exhibition, description of.....	303, 304
Sewing-machines and implements, classification of .....	355
Sessions of the Commission, statement of .....	71
Several States. See States.	
Silk, classification of .....	353
Silk, yarn, &c. See Yarn-congress, International congresses at Vienna, &c.	
Sims, H. A. and J. P., awarded fourth premium for designs for building.....	372
Site for the Exhibition, views of the President of the United States as to the appropriateness of the selection made .....	1



	Page.
Site of the International Exhibition of 1876, views of European engineers, &c., as to the adaptability of, to the purposes of the Exhibition.....	311
Ships' hardware and fittings, classification of.....	354
Shoemaker, John L., communication from.....	63
counselor and solicitor of the Commission.....	335
re-elected solicitor.....	56
Shoes, classification of.....	353
Show-cases, &c., to be provided by exhibitors.....	24
in Vienna Exhibition.....	145
remarks on and descriptions of.....	172
styles and material of.....	173
Sketches, drawings, &c., of articles exhibited.....	25
Skins, classification of.....	349
Sloan, Samuel, awarded second premium for designs for building.....	372
Small ware and fancy goods, place in classification of Vienna Exhibition.....	166
Smith, Horace J., communication from, relative to an experimental farm.....	91
Smith, Lewis Waln, temporary secretary of the Commission continued in control of office.....	58
elected to executive committee.....	56
member of executive committee.....	336
acceptance of report of.....	29
report of.....	29
resolution of thanks to.....	64
(See also Temporary secretary.)	
Smithsonian Institution to be included in the collective Exhibition by the Executive Departments.....	12
represented in the Exhibition, Executive order relative to.....	21
Soap, classification of.....	351
Soda, classification of.....	350
Societies, manifestation of sympathy by, throughout the country.....	5
and organizations for the propagation of systems of religion by missionary effort, allotted a place in the classification.....	78
Solicitor of the Commission.....	22, 335
by-law concerning, as reported from the committee on by-laws.....	100
by-law relating to.....	98
provided for.....	59, 98
election of.....	98
election of John L. Shoemaker unanimously.....	56
mode of election, &c.....	59
South America, efforts to induce co-operation of the nations of.....	14
space allotted to, in the industrial, machinery, and agricultural halls, Paris Exhibition of 1867.....	141
Carolina, action relative to death of commissioner of.....	34
proceedings upon the death of commissioner for.....	53
Kensington Museum, London, lectures, library, museum, &c., of.....	278
Space allotted to buildings Vienna Exhibition.....	131
apportionment of, Vienna Exhibition.....	130
in International Exhibition of 1876, allotment of.....	22
application for, must be made previous to March 4, 1875....	323
forfeiture of.....	23
no charge for.....	24
in Vienna Exhibition, allotment of.....	140
(See Allotment of space.)	
required by intending exhibitors, action relative to obtaining estimates of.....	65
Special advantages claimed for the Exhibition of 1876.....	325, 335
agent at London, communication recommending appointment of Col. L. M. Montgomery.....	35
to Vienna Exhibition, communication from Henry Pettit, presenting his final report as..	295
final report of Henry Pettit as.....	295
instructions to W. P. Blake as.....	69
Henry Pettit appointed.....	69
consents to serve gratuitously.....	69
report of W. P. Blake.....	29, 63, 109
action relative to.....	30
Henry Pettit.....	56
referred to executive committee.....	56
(See Henry Pettit, W. P. Blake, Report, Vienna Exhibition of 1873, &c.)	
agents to Vienna Exhibition. See Vienna International Exhibition, &c.	
agent to Vienna. See William P. Blake, Henry Pettit, Vienna International Exhibition, report of William P. Blake, &c.	
committee on horticulture made a standing committee.....	66
appointed.....	65
committees, how appointed, &c.....	53
constructions in the Exhibition building to be approved by the Director-General.....	24
committee on by-laws, report of.....	97
(See Committee on by-laws.)	
conference. See Conference committee, Committee on conference, &c.	
exhibitions at Vienna Exhibition.....	171
provision for.....	168
features of the plan adopted.....	15
juries of Vienna Exhibition.....	239
meetings of the Commission, provision relative to.....	50, 53, 60, 61
or local committee bureau, Vienna Exhibition, remarks relative to.....	121
regulations to be issued concerning exhibition of fine arts, juries, prizes, &c.....	26
Specifications for plans for the Exhibition buildings.....	96
Specimens of the metals and minerals of the United States.....	5
of mines, collection of, undertaken by the Commission.....	5
Speech. See Address.	
Spikes, classification of.....	354
Spinning machines and implements, classification of.....	355

	Page.
Spiritual welfare of the people, claims of the Exhibition as an instrument for promoting .....	80
Stained glass, classification of .....	354
Stamping machines and apparatus, classification of .....	355
Standing committees .....	335
to consist of seven members .....	54, 61
by-law relative to .....	54, 61
list of .....	54, 61
powers and duties of .....	54, 61
(See Committees, &c.)	
Stands for carriages, space allotted for at Vienna Exhibition .....	133
State Board of Supervisors of Pennsylvania invited to meet the Commission .....	35
boards of agriculture, offers of co-operation from .....	5
Centennial Committee of Pennsylvania, conference with committee of .....	68
Centennial Supervisors of Pennsylvania, powers and duties of, in connection with the memorial hall .....	377
governments, address to officers of .....	69, 81
of Kentucky. See Kentucky.	
North Carolina. See North Carolina.	
Pennsylvania. See Pennsylvania.	
Tennessee. See Tennessee.	
Virginia. See Virginia.	
legislatures, favorable action of .....	7
States, reports from, proceedings relative to .....	53
resolutions by, calling upon Congress to promote the success of the Exhibition .....	7
States and Territories, co-operation of women of, recommended .....	70
Governors of, secretary directed to notify, of vacancies in the Commission .....	56
suggestions to the Governors of, to secure full representation .....	11
to be requested to appropriate in aid of the Exhibition .....	71
Stated meetings, by-law relative to .....	61
Statement of the expenses, &c., of the Commission to May 1, 1873 .....	92
Board of Finance to May 1, 1873 .....	92
Citizens' Finance Committee to May 1, 1873 .....	92
(See also Expenses.)	
various sessions of the Commission, time of sitting, number of members present, &c. ..	71
Statistics of the great exhibitions .....	127, 147, 149, 158, 213, 214, 215, 222, 223, 224, 225, 272
(See Vienna Exhibition; Paris Exhibition; London Exhibition, &c.)	
Statistical and graphical tables of industrial progress, &c. ....	168
Steam and water power, rules under which, to be supplied exhibitors .....	24
application for .....	24
railway to Fairmount Park, remarks upon the importance of ....	91
service, remarks on the necessity of, in great exhibitions .....	161
Steamship companies, committee on transportation instructed to arrange with, for increased facilities in 1876 .....	58
Steel, specimens of for Exhibition .....	5
Steps to secure proper representation of the products of each State and Territory .....	5
Stevens, John G., elected to executive committee .....	56
member of executive committee .....	336
Stimulating substances of vegetable growth, classification of .....	347
Stock certificate. See Certificate of stock.	
of Centennial Board of Finance, necessity of immediate subscriptions urged .....	33
one million shares to be issued .....	77
amount to be paid on subscription to .....	77
time for paying the whole amount of subscription to .....	77
certificates of, to be prepared by Secretary of the Treasury .....	342
penalty for counterfeiting certificates of .....	342
designs for certificate of invited .....	69
issue of to the amount of ten million dollars authorized .....	340
certificates of to be transferable .....	341
corporations existing under laws of United States authorized to subscribe to .....	341
(See also Centennial Board of Finance.)	
rules relative to payments upon .....	69
subscriptions to .....	4
values and paper currency, international congress at Vienna for the consideration of .....	249
Stockholders of Board of Finance, board of directors elected from one hundred nominated by executive committee .....	70
minutes of meeting of reference to .....	29
Stone, clay, and glassware, group in classification of Vienna Exhibition .....	166
Stone-working machines, tools, and appliances .....	355
Stones, classification of .....	344
Storage of packing-cases at Vienna Exhibition .....	181
tariff of charges for .....	181
Strauss, John, musical director at Vienna Exhibition .....	219
Straw, E. A., elected chairman of committee on manufactures .....	66
member of the committee on plans and architecture .....	336
remarks of .....	40
Straw hats, classification of .....	353
Submarine constructions, classification of .....	363
Subscriber to stock, to receive subscription certificate on payment .....	75
engraved stock certificate .....	69, 77
Subscribers to stock, names of, to appear in the records of the Celebration .....	77
the guarantee fund Paris Exhibition of 1867, number of .....	124
Subscription, books for, resolution relative to .....	65
certificates, form of .....	76
to stock of Board of Finance, rule relative to books for .....	75
Subscriptions, national banks throughout the country empowered to receive .....	325
amount subscribed by Philadelphia and Pennsylvania .....	325
causes which delay .....	325



	Page.
Subscriptions to stock, commissioners requested to confer with Board of Finance concerning .....	65
to the stock of the Board of Finance .....	4
action relative to .....	33
ill-success of efforts to obtain, outside of Pennsylv-	
vania .....	7
means adopted to popularize .....	93
reports from the several States .....	53
success of Women's Executive Committee in pro-	
curing .....	7
in Pennsylvania .....	4
in other States .....	5
Suggestion as to holding an international patent congress in connection with the Exhibition of 1876 ....	258
as to workshop in Fairmount Park during the construction of the Exhibition buildings ....	184
of a means to disseminate information of the nature, purposes, and importance of the Exhi-	
bition .....	89
Suggestions by Baron von Weber as to the buildings for the Exhibition of 1876 .....	315
by Henry Pettit as to the buildings for the International Exhibition of 1876 .....	310
by the Chief of Ordnance relative to the proper classification of the material and enginery	
of war .....	18
of the Director-General to the Governors of the several States relative to securing a full	
representation, &c .....	11
relative to a collective exhibition by the Executive Departments of the General Govern-	
ment .....	17
relative to the classification invited .....	377
establishment of saw-mills, machine-shops, &c., at Fairmount Park from the	
commencement of the Exhibition buildings .....	178
Sun-shades, classification of .....	353
Supervisors, Board of, of Pennsylvania, introduction to Commission of .....	38
invited to meet the Commission .....	35
resolution inviting members to seats in Commission .....	45
resolution of thanks to .....	62
Supervisory powers of the Commission, remarks relative to .....	70
Surface assigned each country in Paris Exhibition of 1867, area of .....	136
Surgeon-General, changes in the classification suggested by .....	18
Sweden and Norway, acceptance by, of invitation to participate in International Exhibition of 1876 ..	324
Switzerland, acceptance by, of invitation to participate in International Exhibition of 1876 .....	324
table showing area of ground allotted to, at Vienna Exhibition .....	134
Sympathy with the Commission manifested by societies and associations throughout the country .....	5
Syndicates of installation of Paris Exhibition of 1867, number of .....	124
System of classification. <i>See</i> Classification.	
notation of the classification as amended .....	30
Systematic arrangement of goods exhibited, importance of strict adherence to .....	266
damage to Vienna Exhibition from neglect of .....	266
( <i>See also</i> Comparative system of arrangement.)	

## T.

Table-furniture, classification of .....	354
Table of contents of the report of W. P. Blake on the organization, administration, and results of the	
Vienna Exhibition .....	110
showing area of chief buildings at Vienna Exhibition .....	134
ground allotted to foreign countries at Vienna Exhibition .....	134
industrial palace Vienna Exhibition .....	133
assigned to different parts of Paris Exhibition of 1867 .....	135
awards of prizes distributed to various countries at Vienna Exhibition .....	240
area of Champs de Mars .....	300
distribution of area under roof .....	300
cost of exposition building at Paris, 1867 .....	300
expenses and receipts of the Paris Exhibition of 1867 .....	301
cost of buildings of Paris Exhibition of 1855 .....	298
at Paris Exhibition of 1867 .....	149
at Vienna Exhibition .....	147
dimensions of rotunda of industrial palace of, compared with some of the largest domes	
in the world .....	149
cost of buildings of London Exhibition of 1862 .....	299
printing at Paris Exhibition of 1867 .....	206
increase of freight and passengers on railways of Austria from January to June, 1873,	
over same period for 1872 .....	156, 157
showing number of exhibitors in various groups at Paris Exhibition of 1867 .....	229
Vienna Exhibition .....	228
jurors appointed for each group at Vienna Exhibition .....	234
members of international jury of Paris Exhibition of 1867 .....	234
size of industrial palace and machinery-hall, Vienna Exhibition .....	302
area in acres of buildings of Vienna Exhibition .....	302, 303
space allotted to each country in the industrial, machinery, and agricultural halls,	
Paris, 1867 .....	141
the area of surface assigned to each country in the Paris Exhibition of 1867 .....	136
the extent, cost, and receipts of the principal international exhibitions .....	272
the number of awards made in each of the groups .....	241
the awards in the fine-art department .....	241
the number of awards of each class to the exhibitors from each of the different coun-	
tries at Vienna Exhibition .....	241
tariff of photographs for exhibitors at Vienna Exhibition .....	208
Tables, classification of .....	353
giving full returns of the Vienna Exhibition for each month .....	222
relative to numbering of yarn .....	254, 256
( <i>See</i> Yarn-congress at Vienna, International congresses at Vienna, &c.)	

	Page.
Tables showing comparison of receipts from visitors at the exhibitions of 1855, 1862, 1867 .....	225
Tacks, classification of .....	354
Tariffs and transportation, committee on .....	336
(See Committee on.)	
Tasting-hall in Vienna Exhibition, regulations concerning .....	187
Teachers and managers of institutions for the blind, international congress of, at Vienna .....	248
in the universities, colleges, and schools of the United States, address to .....	69, 80
Teaching and instruction, place of, in classification of Vienna Exhibition .....	167
Technical newspapers and journals, effect of Vienna Exposition upon .....	207
Telegraphic instruments and methods .....	359
Temporary exhibitions of certain articles at Vienna Exhibition .....	169
secretary Centennial Board of Finance, notification of the appointment of Thomas Cochran .....	35
of the Commission, report of .....	29
acceptance of report of .....	29
account of expenditures, &c., presented by .....	29
continued in control of the office .....	58
report of .....	91
statement of expenses, &c., annexed to the report of .....	93
thanks to Lewis Waln Smith for gratuitous services as .....	64
Tennessee, acknowledgments to legislature of .....	69
liberality of, commended by the Commission .....	64
resolutions of the legislature of, indorsing the International Exhibition, and requesting an appropriation by the General Government .....	7, 69, 72
statement of the progress of the work in .....	53
thanks to the commissioners of .....	53
Terra-cotta, classification of .....	351
Territories, suggestions to the Governors of, relative to securing adequate representation, &c .....	11
(See also States and Territories.)	
Tests of objects at Vienna Exhibition .....	168
Textile and felted fabrics, apparel, costumes, &c., place assigned in the classification .....	6, 352
industry and clothing, group in classification of Vienna Exhibition .....	166
Thanks, letter of, from John L. Shoemaker .....	63
of the Commission tendered to Governor Hartranft, of Pennsylvania .....	68
tendered to Women's Centennial Executive Committee .....	56
resolution of, to W. P. Blake .....	58
(See also Resolution of.)	
to representatives of the press .....	67
vote of, to the commissioners for Tennessee .....	53
The century from 1776 to 1876, retrospect of .....	333, 334
Third session of the Commission, May, 1873, index to journal of proceedings at .....	102
Thirteen women of Philadelphia appointed an executive committee by the Citizens' Centennial Finance Committee .....	70
Thomson, Mr. John Edgar, of the Board of Finance, remarks of .....	40
Ticket bureau, Vienna Exhibition, remarks relative to .....	121
Tickets at Vienna Exhibition .....	212
Time at which the buildings for the Exhibition should be finished .....	145
importance of improving, to the utmost, in preparing for the Exhibition of 1876 .....	79, 80, 95, 331
required for the proper installation of the articles of Exhibition .....	177
failure to allow, at Vienna .....	177
of occupying the floor, action relative to .....	54
provision relative to .....	62
of opening and closing of Vienna Exhibition .....	184
Title of the Commission .....	97
Exhibition .....	97
Commission officially declared .....	59
Exhibition officially declared .....	59
Transfer of grounds in Fairmount Park to the Commission .....	7
Translating bureau, Vienna Exhibition, remarks relative to .....	120
Transportation, effect of a great exhibition upon, as shown in report of Paris Exhibition of 1867 .....	157
objects relating to, place in the classification .....	6
of passengers and goods at Vienna Exhibition, regulations relative to reduction of rates of fare .....	150, 156
(See Committee on tariffs and transportation.)	
Transportation-table showing increase of passengers and freight on railroads during Vienna Exhibition .....	156, 157
Transportation upon suspended cables, aerial and pneumatic transportation .....	357
Travel, committee on tariffs and transportation instructed as to providing facilities for, in 1876 .....	58
Treasurer of the Commission, by-law providing for, &c .....	98
powers and duties .....	99
election of .....	98
Treasury Department of the United States, certificates of stock to be executed in .....	77
Secretary of, to prepare certificates of stock of Exhibition of 1876 .....	326
Treatises on international law, prizes for, proposed .....	62
Trimmings, classification of .....	353
for clothing, furniture, and carriages, classification of .....	353
Tools, classification of .....	355
implements, machines, and processes, place in the classification .....	6
Totals of visitors, receipts, &c., of Vienna Exhibition .....	222, 223, 224
Turkey, appropriation by, of £100,000 to secure proper representation at the Vienna Exhibition .....	128, 179
Turkish bazaar, &c., proposition to establish, in the Exhibition grounds .....	271
Turpentines, classification of .....	351
Twickenham Museum, London .....	278
Type-making machines and apparatus, classification of .....	355
Type-setting machines and apparatus, classification of .....	355
Typographic aids to the preservation and dissemination of knowledge .....	358



## U.

	Page.
Umbrellas, classification of.....	353
Unfavorable conditions affecting the attendance at Vienna Exhibition .....	215
Uniform numbering of yarn, international congress at Vienna for discussing the question of.....	248
Union of exhibitors for collective exhibition of goods.....	275
United States not to be liable for expenses of Exhibition.....	339
President of, to make proclamation, &c.....	339
ground allotted to, at Vienna Exhibition .....	134
appropriation by, to secure representation in Vienna Exhibition .....	128
remarks relative to importance of a history of industries of, for last century.....	204
method adopted by exhibitors from, at Vienna Exhibition to make their goods more conspicuous.....	150
space allotted to, in the industrial, machinery, and agricultural halls, Paris Exhibition of 1867.....	141
area of surface assigned to, in Paris Exhibition of 1867.....	136
responsibility of, for the success of the Exhibition of 1876.....	3
Government, Exhibition of 1876 to be held under the auspices of.....	326
ministers abroad, circular-letter to.....	13
Mint, communication from Director of, relative to commemorative medals, &c.....	34
Senate, message from the President to, transmitting report of the Commission.....	1
Universal Exhibition. <i>See</i> International Exhibition of 1876; Paris Exhibition; London Exhibition, Vienna Exhibition, &c.	
Universities and colleges of the United States, address to the officers and teachers of.....	69, 80
Utility of great exhibitions.....	272

## V.

Vacancies in board of directors of the Board of Finance to be filled by the directors.....	88
in the Commission, secretary directed to notify governors of .....	56
Vacancy in executive committee, how filled, &c .....	60
Value of experience in the conduct of great international exhibitions .....	266
Various reports of the Commission referred to .....	2
Varnishes, classification of .....	351
Vaux & Radford, of New York, acceptance of plans offered by.....	374
Vanx, Calvert, one of the authors of the accepted plan .....	11
Vegetable drugs and perfumes, classification of.....	347
extracts and compounds used chiefly for food, classification of.....	349
fibrous substances used in the arts, classification of .....	347
Vegetables preserved, classification of .....	349
Vehicles and apparatus of transportation upon common roads and accessories thereto.....	357
Ventilating apparatus and fixtures, classification of .....	354
Ventilation of Vienna Exhibition, remarks relative to .....	290
Vienna, area and population of.....	217
meteorology of.....	217
Vienna Exhibition of 1873, report of special agent to.....	109, 279
governmental regulations concerning.....	113
privileges extended to officers of .....	113
arrangement as to salaries of Government officers engaged in .....	113
regulation as to special services under the general direction .....	113
financial basis.....	113
provision for disposition of income arising from .....	113
powers and duties of the general director of.....	113
director-general of, authorized to engage co-operation of the imperial credit institution for commerce and trade.....	113
remarks on committees or sections .....	117
committee on education.....	117
on woman's work .....	117
preparations for the establishment of atheneums, and increasing the usefulness of the Exhibition, remarks on .....	117
exhibitions of art and industry .....	117
foreign division.....	117
division for Hungary .....	117
art at the present time .....	117
exhibition of art and industry.....	117
music at .....	117
army and navy.....	117
imperial commission, remarks on.....	115, 117
finance .....	115
architecture and buildings.....	115
arrangement for division of space.....	115
regulations for restaurants.....	115
local affairs .....	115
communication.....	115
installation of machines .....	115
printing and publishing.....	115
the organization of the jury .....	115
exhibitions of art-industry.....	116
education .....	116
music .....	116
agriculture.....	116
general direction of, conferred by private imperial letter and decree upon Privy-Counselor Baron William von Schwarz-Senborn with title of imperial and royal general director .....	117
remarks concerning general direction.....	117, 118
general offices, remarks relative to .....	122
finances, remarks relative to.....	124, 125, 126, 127

	Page.
Vienna Exhibition of 1873, guarantee fund, remarks relative to .....	124
appropriation for the exhibition, analysis of the law of July 21, 1871 .....	124, 125
imperial decree upon the administration of finances .....	126
expenditures for buildings, &c .....	126, 127
receipts .....	127
receipts from visitors .....	127
appropriations made to secure representation in, by—	
German Empire .....	128
France .....	128
England .....	128
Italy .....	128
Japan .....	128
Turkey .....	128
Egypt .....	128
United States .....	128
Belgium .....	128
Greece .....	128
Russia .....	128
Brazil .....	128
China .....	128
archives and correspondence, remarks relative to .....	122, 123
samples of printed memorandum wrappers used to hold letters .....	123
list of active members of commission of .....	117
agriculture, agricultural machines, &c., at .....	116
architecture, buildings, &c .....	115
foreign commissions .....	114
importance attached to, by principal nations, shown by the character of the commissions they appointed .....	114
British commission headed by Prince of Wales .....	114
Belgian commission, &c .....	114
Russian commission, &c .....	114
Japanese commission of fifteen with a member of supreme council of state as president, &c .....	115
local committees .....	115
remarks relative to executive committee .....	116
list of committees and their functions .....	115
report of W. P. Blake as special agent to .....	109
origin and organization .....	111
guarantee fund of .....	111
original estimates of expense of .....	111
imperial support of the enterprise .....	111
the general direction .....	111, 112
appropriations to .....	111
statute of organization of .....	112
papers and documents of .....	112
relations of the management with departments of government .....	112
appointment of officers and servants .....	112
army and navy in .....	116
division for Lower Austria .....	116
Hungary .....	116
foreign division .....	116
eastern division .....	116
preparations for the establishment of atheneums, and increasing the useful- ness of the exhibition .....	116
efficiency of committees .....	116
working organization of imperial commission .....	115
imperial commission subdivided into twenty committees .....	115
location of .....	129
regulation of the Danube .....	129
number and designation of officers .....	119
remarks relative to .....	119
director general .....	119
architects' bureau .....	119
engineers' bureau .....	119
bureau for gardening .....	120
installation bureau .....	120
publishing bureau .....	120
translating bureau .....	120
press bureau .....	120
catalogue bureau .....	120
report bureau .....	120
ticket bureau .....	121
finance bureau .....	121
law bureau .....	121
jury bureau .....	121
special or local committee bureau .....	120
inspection bureau .....	121
police bureau .....	121
military bureau .....	121
sanitary bureau .....	121
archives and correspondence .....	122
general offices .....	122
area of ground inclosed .....	131
length of fencing .....	131
space allotted to buildings .....	131
cost of boiler-house .....	149



	Page.
Vienna Exhibition of 1873, description of imperial pavilion.....	149
remarks relative to materials used in buildings of .....	150
flooring of buildings .....	150
regulations relative to reduction of fares for transportation of passengers and goods .....	150
visited by Director-General Goshorn .....	2
governmental regulations concerning .....	113
privileges extended to officers of .....	113
arrangement as to salaries of government officers engaged in .....	113
regulation as to special services under the general direction .....	113
financial basis of .....	113
provision for disposition of income arising from .....	113
powers and duties of the general director of .....	113
director-general of, authorized to engage co-operation of the imperial credit institution for commerce and trade .....	113
director-general of, not required to follow rules laid down for governmental financiering, &c. ....	113
freedom from stamp-duties and government taxes .....	113
modes of reaching the exhibition from the city .....	159
management of vehicles at .....	162
exceptions to the rules established at .....	162
street management of vehicles at Vienna during .....	162
inadequacy of means of transportation to .....	162
steam-cars within the buildings .....	163
failure of horse-railways to accommodate the travel .....	163
reception and delivery of goods .....	165
classification and arrangement adopted .....	165
remarks on the classification .....	161
regulations for carriages, public and private .....	162
complaints against hackmen at .....	166
outside structures at, remarks on .....	137
list of outside structures at .....	130
allotment of space at .....	144
number of visitors .....	144
receipts from visitors .....	143
effect of the weather upon attendance .....	144
of prices upon attendance .....	144
want of time in construction, &c. ....	144
price of tickets .....	144
capacity of the buildings .....	145
defects in .....	145
no vistas in .....	145
show-cases in .....	145
the grand rotunda .....	145
acoustic properties of the great rotunda .....	145
the buildings for .....	142
space in the buildings .....	142
comparative excellence of the form of building, &c., considered .....	142
features of the grand rotunda .....	142
flooring of the buildings .....	142
remarks on the machinery-hall .....	145
United States section of .....	145
representation of machinery of the United States .....	145
machinery sent to, by Sellers & Co. ....	146
agricultural hall of .....	146
creditable display of agricultural machines and implements by the United States .....	146
few visitors to machinery and agricultural department .....	146
outside grounds, remarks relative to .....	132
accessibility of .....	161
arrangements for the reception of visitors .....	161
hotel prices during continuance of .....	210
restaurants in city during continuance of .....	211
competitive trials of machinery, &c., at .....	168
comparison of industries of different epochs at .....	168
influence of science in utilization of waste in manufactures shown .....	168
history of prices exhibited .....	168
international exchange of products shown, &c .....	168
attention given to statistical and graphical tables .....	168
information concerning each article to be attached to it if desired .....	168
comparative trials, experiments, tests, &c., at .....	168
temporary exhibitions of certain articles at .....	168
international races, national games, regattas, &c., at .....	169
experiments on tractive force of animals at .....	169
tasting pavilions at .....	169, 187
international congresses and conferences at .....	169
questions for discussion by international conferences at .....	169
realization of the plans for experiments, congresses, collections of statistics, &c. ....	169
arrangement of objects at .....	169
installation of objects at .....	169
variety and elegance of show-cases, &c. ....	169
special exhibitions at .....	171
material and styles of show-cases .....	173
price of labor in Vienna during continuance of .....	143
backwardness of the preparations for .....	143
number of men employed upon the buildings .....	143
ornamentation of the grounds .....	144

	Page.
Vienna Exhibition of 1873, installation of goods .....	144
improvements at Vienna in anticipation of .....	144
policing of .....	189
fire department .....	191
hotel accommodations, &c., at Vienna during continuance of .....	209
methodical exhibition by large iron-works at .....	175
organization of the installation bureau .....	175
regulations relative to installation .....	176
regulations relative to expense of flooring .....	176
appropriation by various governments to secure proper representation at .....	179
condition of the installation at the opening day .....	179
state of the various sections on the opening day .....	179
backwardness of the United States department .....	179
storage of packing-cases .....	181
tariff of charges for storing empty cases .....	182
meteorology of Vienna .....	217
area and population of Vienna .....	217
attractions of the Prater .....	218
out-of-door life of the Viennoise as contributing to the success of .....	218
cafés in vicinity of .....	218
music at .....	218
programme of exhibition concert .....	219
number of visitors at .....	220
receipts from visitors .....	220
attractions of the "People's Prater" .....	220
railroad communication with .....	220
access to the exhibition .....	220
visitors to the rotunda .....	220
view from the lantern of the rotunda .....	220
table showing the number of awards of each class to the exhibitors from each of the different countries .....	241
table showing the number of awards made in each of the groups .....	241
table showing the awards in the department of fine arts .....	241
diplomas of honor awarded .....	242
hospitalities, &c., to the international jury of awards .....	244
pavilion of the international jury of awards at .....	245
official list of the awards .....	245
accommodations for the jury of awards .....	245
prize competition for meritorious foremen and workmen .....	246
distribution of prizes to workmen .....	247
table showing increase of freight and passengers on railways of Austria, from January to June, 1873, over same period for 1872 .....	156
water-works at, remarks upon and description of .....	194, 304
drainage and sanitary fittings, report containing detailed description of .....	195, 303
printing and publishing, remarks upon importance of and description of .....	199
programmes, remarks relative to .....	200
list of reports upon, up to November 30, 1873 .....	200
correspondence at, description of and remarks relative to .....	201
lithographic announcements at, description of and remarks relative to .....	201
official catalogue, remarks relative to .....	201, 202
British catalogue, remarks relative to .....	202
American department catalogue, remarks relative to .....	202
Russian special catalogue, remarks relative to .....	203
history of Austrian industries, description of and remarks upon importance of .....	203
remarks relative to reports of .....	204
separate reports for working-classes .....	204
newspaper establishment at .....	206
foreign correspondents at .....	207
rules for exhibitors of machinery .....	183
forwarding, receiving, and erecting objects .....	184
posting and publishing of regulations .....	184
time of opening and closing .....	184
Austrian custom-house regulations .....	184
form of wagon-pass .....	185
memorandum of sales .....	186
water-supply .....	188
general inquiry and reclamation office .....	188
reading and writing room .....	188
book-store .....	188
seats for visitors .....	188
rolling-chairs .....	189
cloak-rooms and parcels office .....	189
post-office .....	189
division of ground into zones .....	131, 132
carriage-stands at .....	133
horse-exhibition, space devoted to .....	133
table showing area of industrial palace .....	133
area of annexes .....	133, 134
table showing area of ground allotted to various countries .....	134
area of machinery hall .....	134
area of chief buildings .....	134
agricultural hall, remarks relative to .....	146
display of flowers, remarks relative to .....	146
materials used in construction of buildings .....	146, 150
classes of buildings .....	146
industrial palace, length of walls, &c .....	147
table showing cost of buildings and accessories .....	147, 148



	Page.
Vienna Exhibition of 1873, cost per acre of the buildings. ....	148
table showing dimensions of rotunda of exhibition compared with some of the largest domes of the world .....	149
cost of rotunda of exhibition.....	148
number of visitors compared with the population .....	221
price of admission as affecting attendance.....	221
statement of returns of .....	222, 223, 224
total number of visitors.....	222, 223, 224
receipts from .....	222, 223, 224
table showing size of industrial palace and machine hall of .....	302
area in acres of buildings of .....	302, 303
weight of wrought-iron in rotunda of.....	303
regulations and arrangements for the convenience of visitors.....	183
charges to foreign commissions for flooring. ....	183
made a bonded warehouse.....	183
art-gallery of .....	183
general and special regulations issued for each department .....	183
general description of plan, surrounding grounds, &c .....	282
reasons given by the general direction for preferring the plan adopted .....	282
remarks of Henry Pettit upon the comparative excellence of the geographical and the systematic or comparative arrangement of objects .....	282
precedence of the geographical arrangement allowed by the general direction.	282
geographical arrangement well carried out.....	282
materials of the buildings.....	318
leaks in roof of the rotunda .....	319
ample provision for entrance and exit .....	319
method of construction, time of erection, &c.....	287
iron-work of .....	288
competition for design for prize-medals.....	248
jury to select design for prize-medals .....	248
prize for design for prize-medals.....	248
international congresses for consideration of various subjects.....	248, 258, 265
extent, cost, and receipts of.....	272
the system of prizes at .....	242
rates of admission at .....	212
programmes and proceedings of various international congresses. ....	248, 249, 250, 259, 260, 262, 263, 265
sanitary and police regulations.....	267
insufficient protection of the interests of exhibitors .....	269
technical newspapers and journals at .....	207
bookstore in .....	207
photographs of.....	208
tariff of photographs for exhibitors at .....	208
tables showing comparison of receipts from visitors at, with the Exhibitions of 1855, 1862, 1867 .....	225
working-men, visits of, at.....	226
duration of exhibition .....	226
number of exhibitors of.....	227
table showing number of exhibitors in various groups of .....	228
international jury, awards of .....	229
regulations for organization of jury of .....	229
tardiness in nominating jurors of .....	233
table showing number of jurors appointed for each group of.....	234
special juries of .....	234
division of juries of, into sections .....	234
commencement of jury-work of .....	235
explanations of jury regulations of .....	235
difficulties of jury-work of .....	236
form of questionnaire of .....	237
special juries of .....	239
remarks relative to distribution of prizes of .....	239
table showing number of awards of prizes of, to various countries .....	240
water-works and fire department of. ....	289
ventilation and sanitary arrangements of .....	290
railway and city communication of.....	291, 293
communication from Henry Pettit, special agent to, presenting his final report.....	295
report of Henry Pettit, special agent, on the buildings, &c .....	279, 295
site of.....	279
access to the grounds of .....	279
fence around .....	280
preparation of the ground, foundations, drainage, &c .....	280
bricks used in .....	280
use of pile foundations in .....	281
intention with regard to the great rotunda .....	281
area of, and apportionment of space at .....	130
style of the buildings, materials, and decorations, &c.....	286
monumental character of the designs for the stucco work.....	287
beauty of the corridors .....	287
fine effect of the cheap decorative canvas of Bossi of Milan.....	287
method of construction and time of erection .....	287
railway communication, &c .....	305
detailed estimates of the cost of .....	306
list of buildings within the inclosure.....	307
division of the plan into zones .....	307
list of papers, drawings, illustrations, &c., accompanying the report of Henry Pettit, special agent to .....	309

	Page.
Vienna Exhibition of 1873, action relative to obtaining information of .....	69
reports of special agent to referred to executive committee .....	63
rates of admission .....	212
tickets, &c .....	212
number of visitors .....	213
receipts from visitors ..	213, 214
number of visitors in each month .....	215
unfavorable conditions affecting the attendance .....	215
comparative tables of attendance, &c .....	215
change in the rates of admission .....	216
dome of to be finished in nine months .....	303
industrial palace of .....	283
excellence of the proportions of width and height to length, and the effects produced, the lighting, &c. ....	283
interior decorations .....	283
the rotunda, interior, and exterior .....	284
construction of the rotunda .....	284
lighting of the rotunda .....	285
pavilion for amateurs, jury pavilion, emperor's pavilion, &c. ....	285
roofing in of the open courts .....	285
financial basis of. ....	3
remarks on .....	3
report of special agent to .....	29, 56, 63
action upon report of agent to .....	30
<i>See</i> Special agent to Vienna; W. P. Blake; Henry Pettit, &c.	
Vienna, price of labor at, as affected by the Exhibition .....	145
Vice-presidents, Centennial Board of Finance, notification of election of .....	35
of the Commission .....	23, 335
election of .....	55, 59, 98
by-law concerning .....	60, 98
powers and duties of, &c .....	60
number of, to be elected .....	59
precedence of .....	60, 98
provided for .....	98
Vinegars, classification of .....	351
Virginia, amendment of report of executive committee relative to .....	34
favorable action of legislature of .....	69
acknowledgments to legislature of .....	69
resolutions by legislature of .....	
instructing their Senators and Representatives to support the Exhibition as the best means of restoring fraternal relations between the different sections of the Union, &c. ....	7, 74
Visitors at Paris Exhibition of 1867, table showing different modes of transport of .....	158
number of .....	224
approximate statement and classification of .....	225
to the Exhibition of 1876, exhibitors not to be allowed to solicit purchases by .....	25
to Vienna Exhibition, regulations and arrangements for the convenience of .....	183
ratio of, to the population .....	221
total number of .....	222
total receipts from .....	222
receipts from .....	127, 213, 214
number of, in each month .....	215
Vistas, importance of, in exhibitions .....	145
absence of, at Vienna .....	145
in the Exhibition of 1876 provided for. ....	15
Von Weber, Baron, suggestions by, relative to the buildings for the Exhibition of 1876 .....	315
Vote of thanks to the commissioners for Tennessee .....	53
Vouchers for every item of money paid by the Commission on file in the office .....	93

W.

Walking-canes, classification of .....	353
Wall-papers, classification of .....	353
Wants and financial condition of the International Exhibition of 1876, remarks relative to .....	325
War, enginery and material of, place in the classification .....	18
Washington, weight and cost of iron-work in the dome of the Capitol at .....	303
Territory, amendment of report of executive committee relative to .....	34
Waste in manufactures, illustration at Vienna Exhibition of the influence of science in gradually utilizing .....	168
Water and steam power, how supplied to exhibitors .....	24
Water-supply and fire department at Vienna Exhibition, description of, and remarks relative to .....	289
at Vienna Exhibition .....	188
description of .....	304
Water-works at Vienna Exhibition, remarks upon and description of .....	194
Weaving machines and implements, classification of .....	355
Weights, measures, and coins; weighing and metrological apparatus .....	361
Welsh, John, President Centennial Board of Finance .....	338
notification of election of .....	34
remarks of .....	41
Whewell, Dr., opinion of, as to the educational influence of London Exhibition of 1851 .....	80
Williams, J. Fletcher, elected secretary of committee on education .....	66
Women, committee of, appointed by Citizens' Centennial Executive Committee .....	70
idea of eniisting, in the work, suggested by the Citizens' Centennial Executive Committee of Philadelphia .....	70
Women's Association, communication from, read and referred to executive committee .....	57
Centennial Executive Committee, action relative to .....	48, 56



	Page.
Women's Centennial Executive Committee appointed by Citizens' Centennial Finance Committee of Philadelphia.....	70
recognized by the executive committee of the Commission,	70
Mrs. E. D. Gillespie, president of.....	70
commended to commissioners....	70
communication from, soliciting Commission to meet, .....	45
report of, read.....	30
work of, &c .....	7
committee. <i>See</i> Women's Centennial Executive Committee .....	7
work, Vienna Exhibition, remarks relative to .....	117
Wood, W. W., elected chairman of committee on commerce .....	67
elected to executive committee.....	56
member of executive committee .....	335
Wood-industry, group in classification of Vienna Exhibition.....	166
working machines, tools, &c., classification of.....	355
Wool. machine for the manufacture of, communication from S. S. Jones relative to .....	35
Woolen goods, classification of.....	353
Work of the Commission, progress and extent of.....	2, 91, 92
Board of Finance .....	92
Citizens' Finance Committee .....	92
Workmen, prizes to, at Vienna Exhibition.....	246
Working classes, remarks relative to separate reports for, at Vienna Exhibition.....	205
Workingmen, visits of, at Vienna Exhibition, remarks relative to.....	225
Works of art and industry, place in classification .....	368
time required for the production of, for the Exhibition .....	79
World's fair. <i>See</i> International Exhibition of 1876.	
Woven goods of vegetable or mineral materials, classification of.....	352
wool and mixtures of wool, classification of.....	353

## Y.

Yarn-congress at Vienna .....	248, 249
( <i>See also</i> International congresses, Uniform numbering of yarn, &c.)	
Yarns of vegetable or mineral materials, classification of .....	352

## Z.

Zones, division of the plan of the Vienna Exhibition into, for convenience of reference.....	131, 307
--	----------



18 Ap '11





# THE NATIONAL CENTENNIAL.

---

THE INTERNATIONAL EXHIBITION OF 1876.

---

M E S S A G E

OF THE

PRESIDENT OF THE UNITED STATES

TO CONGRESS,

TRANSMITTING

THE THIRD REPORT OF THE UNITED STATES  
CENTENNIAL COMMISSION

ON

THE PROGRESS OF THE WORK INTRUSTED TO IT UNDER ACTS OF CON-  
GRESS PROVIDING FOR A NATIONAL CELEBRATION, BY AN INTER-  
NATIONAL EXHIBITION AND COMMEMORATIVE CEREMONIES, OF  
THE ONE HUNDREDTH ANNIVERSARY OF THE INDEPEND-  
ENCE OF THE UNITED STATES, TO BE HELD AT  
PHILADELPHIA, PENNSYLVANIA, IN THE YEAR  
1876, EMBRACING REPORTS ON THE  
VIENNA EXHIBITION OF 1873.

ARRANGED AND EDITED

By HENRY D. J. PRATT.



















LIBRARY OF CONGRESS



0 005 662 046 1

